CONSTRUCTION AND DESIGN STANDARDS

99.4. CONSTRUCTION STANDARDS FOR PUBLIC AND PRIVATE IMPROVEMENTS

99.4.1. STREETS

99.4.1.1. STREET Classifications

99.4.1.1.1. The STREET classification system is hereby adopted for STREETS in the TOWNSHIP:

99.4.1.1.1.1. Principal Arterial
99.4.1.1.1.2. Minor Arterial
99.4.1.1.1.3. Collector
99.4.1.1.1.4. Local Industrial
99.4.1.1.1.5. Local Commercial
99.4.1.1.1.6. Local Residential

99.4.1.1.2. The function classification of STREETS is as specified in the current Comprehensive Plan of the TOWNSHIP, adopted by the TOWNSHIP, for future conditions.

99.4.1.1.3. The functional classification of any STREET which is not specified in the current Comprehensive Plan of the TOWNSHIP, adopted by the TOWNSHIP, shall be determined by the ENGINEER consistent with the definitions for the STREET classification system.

99.4.1.2. STREET Grading and Paving Schedule

99.4.1.2.1. **Principal Arterial and Minor Arterial** – CONSTRUCTION STANDARDS shall be by the design of jurisdiction responsible for the STREET.

99.4.1.2.2. **Collector** – Typical section of paving and underdrains and shoulder grading for Collector Roads shall be in accordance with the construction standard in Figure 95.5.1.2.2. The geometric design shall be in accordance with the Commonwealth of Pennsylvania, Pennsylvania Department of Transportation, Bureau of Design, Design Manual 2, Publication 13M, Current Edition.

99.4.1.2.3. **Local Industrial and Local Commercial** – grading shall be in accordance with the construction on Figure 99.5.1.2.3a. Typical section of paving, curbing, underdrains and berm grading for commercial or industrial STREETS shall be in accordance with the construction standard in Figure 99.5.1.2.3b.

99.4.1.2.4. **Local Residential** – Grading shall be in accordance with the construction standard in Figure 95.5.1.2.3a. Typical sections of paving, curbing, and underdrains for local residential STREETS shall be done in accordance with the CONSTRUCTION STANDARDS in Figures 95.5.1.2.4a, and 95.5.1.2.4b. The use of the CONSTRUCTION STANDARDS in Figure 95.5.1.2.4c and 95.5.1.2.4d may be permitted under certain conditions to be determined by the TOWNSHIP. Geometric design shall be in accordance with the appropriate design speed and the design standards in Chapter 114 of the TOWNSHIP Code, Subdivision and Land Development.

99.4.1.2.5. **Trench Repaving in Bituminous Paving** – all trench repaving in bituminous pavement shall be constructed in accordance with the construction standard in Illustrations 99.5.1.2.5a through 99.5.1.2.5d. Temporary restoration shall be in accordance with the construction standard in Illustration 99.5.1.2.5a. Permanent restoration shall be in accordance with the construction standard in Illustration 99.5.1.2.5b. Longitudinal openings and Transverse openings shall be in accordance with the construction standard in Illustration 99.5.1.2.5c. Repairing and replacing the 1-1/2" Pavement Wearing Course shall be in accordance with Illustration 99.5.1.2.5d. **[Amended 9-3-13 by Ord. No. 2100]**

99.4.1.2.5.1. Regardless of pavement age, when two or more openings (new or old) have been made within 100 feet in the same lane, the entire lane shall be milled and overlaid (1 ½" min. depth) for the length of roadway between openings and for a distance of 30 feet on each side of the edge of the outer openings in the same traffic lane as the opening. **[Added 9-3-13 by Ord. No. 2100]**

99.4.1.2.5.2. Regardless of pavement age, when a longitudinal opening has been made the entire lane shall be milled and overlaid (1 ½" min. depth) for the length of the opening and for a distance of 30 feet on each side of the edge of the opening in the same traffic lane as the opening. **[Added 9-3-13 by Ord. No. 2100]**

99.4.1.2.6. **Special Underdrain** – all special underdrains shall be constructed in accordance with the construction standard in Figure 99.5.1.2.6.

99.4.1.2.7. **Two Phase Paving** – when the bituminous paving is in a subdivision or other land development being developed at that time and it is anticipated that construction activity and heavy material hauling will be taking place for an extended period of time, a "second phase wearing surface" shall be applied (no sooner than the following paving season). The exact length of time of withholding the wearing surface course will be

determined by the ENGINEER in conjunction with the TOWNSHIP MANAGER and Building Inspector.

99.4.1.2.8. **Curb Ramps** – the location and design of all curb ramps for access by disabled persons shall be approved by the ENGINEER. Such approval does not represent compliance with the Accessibility Guidelines of the Americans with Disabilities Act. **(Added 6-1-92 by Ord. No. 1541)**

99.4.1.3. **STREET Design Criteria**

99.4.1.3.1. **ALL STREET Classifications except Local Residential** – Geometric design shall be in accordance with the Commonwealth of Pennsylvania, Pennsylvania Department of Transportation, Bureau of Design, Design Manual 2, Publication 13M, Current Edition.

99.4.1.3.2. **Local Residential STREET** – the following design criteria generally represent minimum values, which implies the lowest acceptable limit. The elements of the design criteria shall conform to the following:

99.4.1.3.2.1. **Design Speed** – is the maximum safe speed that can maintained over a specified section of roadway when conditions favorable that the design the design features of the roadway govern.

99.4.1.2.3.1.1. The desirable design speed is 25 mph.

99.4.1.3.2.2. **Vertical Crest and Sag Curves** – Vertical Crest and Sag Curves -All minimum vertical curve lengths shall conform to AASHTO Standards and meet sight distance requirements for the height of the eye at 3.5 feet from the top of pavement to the level of the eye and 2.0 feet the height the object. (which is typically the headlights or tail lights of the vehicles) The following minimum K-values shall be used to compute the minimum curve length. Curve length must also be checked for Sight Distance and must exceed the minimum sight distance. For further information, see Chapter 3 of AASHTO, current edition, for vertical curves.

Design Speed (mph)	K-Value	
	Crest	Sag
20*	7	17
25	12	26
30	19	37
35	29	49
40	44	64
45	61	79
50	84	96
55	114	115

** 20 MPH Design Speed requires advanced approval by the ENGINEER and shall comply with AASHTO "A Policy on Geometric Design of Highways and Streets", Latest Edition.*

99.4.1.3.2.3. **Horizontal Curvature** – is the circular arc which connects tangent lines.

99.4.1.3.2.3.1. The sharpest curve without superelevation is as specified in AASHTO "A Policy on Geometric Design of Highways and Streets, Chapter 3, Exhibit 3-26.

99.4.1.3.2.3.2. Reverse curves require a minimum 75 feet of tangent separating the points of curvature.

99.4.1.3.2.3.3. Maximum Rate of superelevation 0.04 ft./ft. will be required for a radius of 125 feet at a design speed of 20 MPH.[1]

99.4.1.3.2.3.4. The minimum radius with superelevation: R= 205 feet, (e_{max}=0.04 ft./ft.)(Based upon 25 MPH design speed).

99.1.4.3.2.3.5. The minimum length of superelevation runoff and runout: See AASHTO "A Policy on Geometric Design of Highways and Streets, Chapter 3, Exhibit 3-29.

Follow Pennsylvania Department of Transportation Design Manual 2 method of attaining super elevation for local roads.

[1] 20 MPH Design Speed requires advanced approval by the TOWNSHIP ENGINEER and shall comply with AASHTO "Geometric Design of Very-Low Volume Local Roads (ADT ≤ 400), Latest Edition, for Crest Curves.

99.4.1.3.2.3.6. The minimum arc length of horizontal curve: L=60 feet.

99.4.1.3.2.3.7. **Clear Sight Triangle** – no obstructions shall be located within the right of way or lot which obscure visibility at the intersection of two STREETS or of a STREET and a residential DRIVEWAY. A clear sight triangle, as defined by this Code, shall be maintained free of any obstructions. The sides of the clear sight triangle shall be measured along the centerline of the intersecting streets and shall meet the minimum standards shown in Figure 99.5.1.3.2.3.7. The clear sight triangle shall be shown on the Final Plat for recording if it is beyond the boundary of the right of way.

99.4.1.3.2.3.8. **Minimum Sight Distance** – when a new STREET intersects an existing STREET, the minimum sight distance at the intersection shall be provided in accordance with the requirements of Section 99.4.5.12.

99.4.1.3.3. **Local Residential and Commercial Cul-de-sacs** – cul-de-sacs shall meet the minimum standards shown in Figures 99.5.1.3.3.1., 99.5.1.3.3.2.a., 99.5.1.3.2.b and Chapter 114 of the CODE of the TOWNSHIP of Upper St. Clair entitled "Subdivision and Land Development". All permanent local residential cul-de-sacs shall be offset circular cul-de-sacs with a forty (40) feet minimum radius.

99.4.1.3.3.1. Cul-de-sacs without islands are preferred by the TOWNSHIP and may be designed with a forty (40) feet minimum radius to the back of bituminous wedge curb. The cul-de-sacs shall meet the minimum standards shown in Figure 99.5.1.3.3.1.

99.4.1.3.3.2. Cul-de-sacs with islands shall be for local residential use only. Cul-de-sacs with islands shall have a minimum radius of 47 feet to the face of a bituminous wedge curb or gutter line with a 25 foot minimum pavement width. Cul-de-sacs and island shall meet minimum standards shown in Figures 99.5.1.3.3.2a. and 99.5.1.3.3.2b. The island area shall meet the geometric and vegetation requirements shown in Figure 99.5.1.3.3.2b.

99.4.1.3.3.3. Temporary turnarounds shall only be permitted to facilitate a multi-phase development. Temporary turnarounds shall be hammerhead, or T-type, cul-de-sacs in accordance with the Construction Standards in Figure 99.5.1.3.3.3. and shall have sufficient reserved right of way to accommodate a cul-de-sac without an island per section 99.4.1.3.3.1. of this Code. Bituminous wedge

curbing is to be carried through the cul-de-sac to the match point with the future roadway extension.

99.4.2. **Storm Water Management Facilities**

99.4.2.1. **Storm Sewer Pipe** – Storm sewers shall be:

99.4.2.1.1. Reinforced Concrete Pipe (RCP) conforming to the appropriate class of ASTM C-76.

99.4.2.1.2. Smooth Flow Polyethylene Pipe (ADS N-12) conforming to the requirements of ASTM Designation F667 (and/or AASHTO Designation M-294). Installation shall be in accordance with ASTM Designation D-2321.

99.4.2.1.3. Polymer Coated Corrugated Steel Pipe (CMP) in detention facilities only, conforming to the requirements of AASHTO Designation M-245 and precoated in accordance with AASHTO Designation M) 246 may be substituted for reinforced concrete pipe for sizes of 42 inches diameter or greater.

99.4.2.2. **Storm Inlets** – storm inlets in STEET paving shall conform to the construction standard in Figure 99.5.2.2a when used at all locations except low points. Storm inlets in STREET paving shall conform to the construction standard in Figure 99.5.2.2b when used at low points. Storm inlets in off pavement areas shall conform to the construction standard in Figure 99.5.2.2c; however, the standard in Figure 99.5.2.2d may be used in certain circumstances when approved by the ENGINEER.

99.4.2.3. **Storm Manholes** – all manholes shall be precast concrete in accordance with the CONSTRUCTION STANDARDS in Figure 99.5.2.3a. Manholes in accordance with the CONSTRUCTION STANDARDS in Figures 99.5.2.3.b, 99.5.2.3.c, and 99.5.2.3.d may be approved by the ENGINEER under special conditions such as insufficient depth, large diameter pipes, etc.

99.4.2.4. **Post-Construction Stormwater Best Management Practices**

99.4.2.4.1. **Post-Construction Runoff Control Requirements**

99.4.2.4.1.1. No Regulated Earth Disturbance activities within the TOWNSHIP shall commence until approval by the TOWNSHIP of a plan which demonstrates compliance with State Water Quality Requirements after construction is complete.

99.4.2.4.1.2. The Best Management Practices (BMP's) must be designed to manage stormwater impacts from development and earth disturbance activities, to promote groundwater recharge, to protect

and maintain existing used e.g. drinking water use, cold water fishery use) and maintain the level of water quality necessary to protect those uses in all streams, and to protect and maintain water quality in "Special Protection" streams, as required by statewide regulations at 25 Pa. Code Chapter 93 (collectively) referred to herein as "State Water Quality Requirements").

99.4.2.4.1.3. To control post-construction stormwater impacts from Regulated Earth Disturbance activities, State Water Quality Requirements can be met by BMP's, including site design, which provide for replication of pre-construction stormwater infiltration and runoff conditions, so that post-construction stormwater infiltration and runoff conditions, so that post-construction stormwater discharges do not degrade the physical, chemical or biological characteristics of the receiving waters. As described in the DEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following:

99.4.2.4.1.3.1. Infiltration: replication of pre-construction stormwater infiltration conditions.

99.4.2.4.1.3.2. Treatment: use of water quality treatment BMP's to ensure filtering out of chemical and physical pollutants from the stormwater runoff.

99.4.2.4.1.3.3. Streambank and Streambed Protection: management of volume and rate of post-construction stormwater discharges to prevent physical degradation of receiving waters (e.g. from scouring and erosion).

99.4.2.4.1.4. The Department of Environmental Protection has regulations that require municipalities to ensure design, implementation and maintenance of Best Management Practices (BMP's) that control runoff from new development and redevelopment (hereinafter "development") after Regulated Earth Disturbance activities are complete. These requirements include the need to implement post-construction stormwater BMP's with assurance of long-term operations and maintenance of those BMP's.

99.4.2.4.1.5. Evidence of any necessary permit(s) for Regulated Earth Disturbance activities from the appropriate DEP regional office or the Allegheny County Conservation District must be provided to the TOWNSHIP. The issuance of an NPDES Construction Permit (or permit coverage under the statewide General Permit (PAG-2)) satisfies the requirements within §99.4.2.4.1.1.

99.4.2.5. **Storm Sewer Lateral Connection** – all sewer lateral connections shall be in accordance with applicable law. All sewer lateral connections shall be located at manholes or at locations approved by the TOWNSHIP MANAGER or his designated representative.

99.4.2.6. **Storm Water Detention Facilities**[2]

99.4.2.6.1. Detention facilities must be designed to safely convey the Post Development 100-year storm through the emergency spillway. **[Amended 1-7-19 by Ord. No. 2201]**

99.4.2.6.2. **Calculation Methods** – for the purposes of computing peak flow rates and runoff hydrographs from the development sites and drainage areas larger than three acres, calculations shall be performed using the methodologies presented in SCS Publication, Technical Release 55 (TR 55). For development sites less than three acres, the Rational Methods is recommended to be utilized and the modified rational method used for routing. The ENGINEER may approve the use of simulation computer programs for the storm water analysis and design. The calculations shall be submitted using the TR-55 worksheets. All graphs and/or charts used must be submitted. **[Amended 1-7-19 by Ord. No. 2201]**

99.4.2.6.3. **Underground Infiltration** **[Amended 1-7-19 by Ord. No. 2201]**

99.4.2.6.3.1. Construction and excavation shall be supervised by a soils ENGINEER who shall certify that the device is properly constructed.

99.4.2.6.3.2. To prevent sediment sealing of the infiltration plain during construction, no runoff shall be permitted to enter the infiltration facility until after the entire drainage area is stabilized.

99.4.2.6.3.3.[3] To provide access for periodic inspection to determine if the infiltration facility is functioning in accordance with design, an observation well is required. The observation well shall consist of a 4 inch vertical perforated pipe extending from the bottom of the infiltration device to just above the surface. The bottom of the vertical pipe shall be sealed and the top fitted with a lockable cap to reduce potential vandalism.

99.4.2.6.4. **Dry Detention Impoundments** – the design of dry detention impoundments shall be approved by the ENGINEER.

[2] §99.4.2.6 was amended by Ord. No. 2201 dated 1-7-19 to comply with Allegheny County Act 167 Stormwater Management Plan.
[3] Former §99.4.2.6.3.3 deleted by Ord. No. 2201 dated 1-7-19.

99.4.2.6.4.1. Inflow and outflow structures, and all facilities should be protected and designed to minimize safety hazards.

9.4.2.6.4.2. The Maximum slope of the detention pond embankments may not exceed 3:1 unless an alternative slope is demonstrated to be structurally sound and approved by the ENGINEER. Restriction of access, such as by fences, walls, or other effective devices, may be required depending on the location of the facilities.

9.4.2.6.4.3. A low flow channel must be installed from the inlet to the outlet structure to accommodate low flow periods. This channel must be designed and constructed of concrete, rip rap, or other erosion control mediums as approved by the ENGINEER. The minimum slope of the low flow channel and pond bottom shall be 2%.

9.4.2.6.4.4. A freeboard of one (1) foot is required on all ponds.

99.4.2.6.5. **Wet Pond Impoundments** – the design of wet pond impoundments shall be approved by the ENGINEER.

99.4.2.6.6. **Underground Detention Facilities** – the design of underground detention facilities shall be approved by the ENGINEER.

99.4.2.6.6.1. Access to the underground detention facility must be provided by manholes or risers a minimum of thirty-six (36") in diameter. Step must be provided to the invert of the facility.

99.4.2.6.7.[4] **As-Built Drawings** – An as-built drawing shall be required for each storm water detention facility constructed. The drawing shall represent an engineering certification of the volume of the facility and the depth versus storage relationship. This relationship shall be shown on the drawing in table form. The drawing shall be signed and sealing by a registered professional ENGINEER and submitted to the TOWNSHIP within sixty (60) days of the completion of the facility.

99.4.2.7. **Cradles and Reinforcements for Sewers** – all cradles and reinforcements for sewers shall be constructed in accordance with the construction standard in Figure 99.5.2.6.

99.4.2.8. **Endwall Details** – all endwall details shall be constructed in accordance with the construction standard in Figure 99.5.2.7. Plastic endwalls may be utilized if approved by the ENGINEER.

[4] Former §99.4.2.6.7 deleted 1-7-19 by Ord. No. 2201

99.4.2.9. **Concrete Encasement and Anchors for Sewers** – all concrete encasement and anchors for sewers shall be constructed in accordance with the construction standard in Figure 99.5.2.8.

99.4.2.10. **Concrete for Drop Manholes** – all connections for drop manholes shall be constructed in accordance with the construction standard in Figure 99.5.2.9.

99.4.2.11. **Design Criteria for Storms Water Collection/Conveyance Facilities** – for the purposes of designing storm sewers, open swales and other storm water runoffs collection and conveyance facilities, the Rational Method shall be applied. The design storm for storm sewers is the 25-year design storm. Calculation sheets must be submitted. **[Amended 1-7-19 by Ord. No. 2201]**

99.4.2.12. Collection/Conveyance facilities should not be installed parallel and close to the top or bottom of a major embankment to avoid the possibility of failing or causing the embankment to fail.

99.4.2.13. Where drainage swales or open channels are used, they shall be suitably lined to prevent erosion, designed to avoid excessive velocities and designed for ease of maintenance. **[Amended 1-7-19 by Ord. No. 2201]**

99.4.2.14. Alternative drainage facilities may be submitted for review by ENGINEER (wetlands, ground water recharge, detention facilities, etc…) **[Amended 1-7-19 by Ord. No. 2201]**

ARTICLE I
GENERAL PROVISIONS
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15 This Ordinance shall be known and may be cited as the "Township of Upper St. Clair Stormwater Management Ordinance."

99.4.2.15.1. Statement of Findings – The Board of Commissioners of the Township of Upper St. Clair finds that:

99.4.2.15.1.1. Inadequate management of accelerated RUNOFF of STORMWATER resulting from development throughout a WATERSHED increases RUNOFF volumes, flows and velocities, contributes to EROSION and sedimentation, overtaxes the carrying capacity of STREAMS and storm sewers, greatly increases the costs of public facilities to carry and control STORMWATER, undermines flood plain management and flood control efforts in downstream communities, reduces GROUNDWATER RECHARGE, threatens public health and safety, and increases nonpoint source pollution of water resources.

99.4.2.15.1.2. A comprehensive program of STORMWATER management (SWM), including regulation of development and activities causing accelerated RUNOFF, is fundamental to the public health, safety, and welfare and the protection of people of the Commonwealth, their resources, and the environment.

99.4.2.15.1.3. STORMWATER is an important water resource that provides GROUNDWATER RECHARGE for water supplies and supports the base flow of streams.

99.4.2.15.1.4. The use of GREEN INFRASTRUCTURE (GI) and LOW IMPACT DEVELOPMENT (LID) are intended to address the root cause of water quality impairment by using systems and practices which use or mimic natural processes to: 1) infiltrate and recharge, 2) evapotranspire, and/or 3) harvest and use precipitation near where it falls to earth. GREEN INFRASTRUCTURE practices and LID contribute to the restoration or maintenance of pre-development hydrology.

99.4.2.15.1.5. Federal and state regulations require certain municipalities to implement a program of STORMWATER controls. These municipalities are required to obtain a permit for STORMWATER discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES) program.

99.4.2.15.2. Purpose – The purpose of this Ordinance is to promote health, safety, and welfare within the TOWNSHIP and its watershed by minimizing the harms and maximizing the benefits described in §99.4.2.15.1. of this Ordinance, through provisions designed to:

99.4.2.15.2.1. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code 93 to protect, maintain, reclaim, and restore the existing and designated uses of the waters of this Commonwealth.

99.4.2.15.2.2. Preserve natural drainage systems.

99.4.2.15.2.3. Manage STORMWATER RUNOFF close to the source, reduce RUNOFF volumes and mimic predevelopment hydrology.

99.4.2.15.2.4. Provide procedures and performance standards for STORMWATER planning and management.

99.4.2.15.2.5. Maintain GROUNDWATER RECHARGE to prevent degradation of surface and GROUNDWATER quality and to otherwise protect water resources.

99.4.2.15.2.6. Prevent scour and EROSION of STREAM banks and streambeds.

99.4.2.15.2.7. Provide proper operation and maintenance of all STORMWATER best management practices (BMPs) that are implemented within the TOWNSHIP.

99.4.2.15.2.8. Provide standards to meet NPDES permit requirements.

99.4.2.15.3. Statutory Authority – The TOWNSHIP is empowered to regulate land use activities that affect RUNOFF by the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended, and/or the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, The Stormwater Management Act.

99.4.2.15.4. Applicability – All REGULATED ACTIVITIES and all activities that may affect STORMWATER RUNOFF, including LAND DEVELOPMENT and EARTH DISTRUBANCE ACTIVITY, are subject to regulation by this Ordinance.

99.4.2.15.5. Repealer – Any other ordinance provision(s) or regulation of the TOWNSHIP inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

99.4.2.15.6. Severability – In the event that a court of competent jurisdiction declares any section or provision of this Ordinance invalid, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

99.4.2.15.7. Compatibility with Other Requirements – Approvals issued and actions taken under this Ordinance do not relieve the APPLICANT of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance.

99.4.2.15.8. Erroneous Permit – Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an APPLICANT is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board,

agency or employee of the TOWNSHIP purporting to validate such a violation.

99.4.2.15.9. Waivers

99.4.2.15.9.1. If the TOWNSHIP determines that any requirement under this Ordinance cannot be achieved for a particular regulated activity the TOWNSHIP may, after an evaluation of alternatives, approve measures other than those in this Ordinance, subject to §99.4.2.15.9.2. The proposed area of disturbance shall be less than one (1) acre. The request for a modification or waiver shall originate with the Landowner, shall be in writing, and shall accompany the STORMWATER MANAGEMENT SITE PLAN submitted to the TOWNSHIP. The request shall provide the facts on which the request is based, the provisions of the Ordinance involved, and the proposed modification. The DESIGNATED PLAN REVIEWER shall review the request to determine if it meets the requirements of the Ordinance, including §99.4.2.15.9.2. below. If acceptable to the TOWNSHIP, the TOWNSHIP may grant the waiver or modification.

99.4.2.15.9.2. Waivers or modifications of the requirements of this Ordinance may be approved by the TOWNSHIP if enforcement will exact undue hardship because of unique physical circumstances or conditions peculiar to the land in question, provided that the modifications will not be contrary or detrimental to the public interest and will achieve the intended outcome, and that the purpose of the Ordinance is preserved. Hardship must be due to such unique physical circumstances or conditions and not to circumstances or conditions generally created by the provisions of the Stormwater Management Ordinance. Cost or financial burden shall not be considered a hardship. Modifications shall not substantially or permanently impair the appropriate use or development of adjacent property. A request for modifications shall be in writing and accompany the STORMWATER MANAGEMENT SITE PLAN submission, as directed in §99.4.2.15.9.1. above.

99.4.2.15.9.3. No waiver or modification of any regulated STORMWATER activity involving earth disturbance greater than or equal to one (1) acre may be granted by the TOWNSHIP.

99.4.2.15.10. Version of Regulations and Standards – Any reference to a statute, regulation or standard, shall be interpreted to refer to the latest or most current version of that document.

ARTICLE II
DEFINITIONS
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.11. For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

99.4.2.15.11.1. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.

99.4.2.15.11.2. The word "includes" or "including" shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.

99.4.2.15.11.3. The words "shall" and "must" are mandatory; the words "may" and "should" are permissive. These definitions do not necessarily reflect the definitions contained in pertinent regulations or statutes, and are intended for this Ordinance only.

99.4.2.15.11.3.1. ACT167 – The TOWNSHIP is empowered to regulate land use activities that affect RUNOFF and surface and GROUNDWATER quality and quantity by the authority of the Act of October 4, 1978. P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Storm Water Management Act."

99.4.2.15.11.3.2. AGRICULTURAL ACTIVITY – Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops including tillage, land clearing, plowing disking, harrowing, planting, harvesting crops or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings of IMPERVIOUS AREA is not considered an agricultural activity.

99.4.2.15.11.3.3. APPLICANT – A landowner, developer, or other person who has filed an application to the TOWNSHIP for approval to engage in any regulated activity at a PROJECT SITE in the TOWNSHIP.

99.4.2.15.11.3.4. BEST MANAGEMENT PRACTICE (BMP) – Activities, facilities, designs, measures, or procedures used to manage STORMWATER impacts from

REGULATED ACTIVITIES, to meet state water quality requirements, to promote GROUNDWATER RECHARGE, and to otherwise meet the purposes of this Ordinance. STORMWATER BMPs are commonly grouped into one of two broad categories or measures: "structural" or "non-structural." In this Ordinance, non-structural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with STORMWATER RUNOFF, whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat STORMWATER RUNOFF. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed WETLANDS, to small-scale underground treatment systems, INFILTRATION facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, san filters, DETENTION BASINS, and manufactured devices. Structural STORMWATER BMPs are permanent appurtenances to the PROJECT SITE.

99.4.2.15.11.3.5. CONSERVATION DISTRICT – A CONSERVATION DISTRICT, as defined in Section 3 (c) of the Conservation District Law (3 P. S. §851 (c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.

99.4.2.15.11.3.6. DESIGN STORM – The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 5-year storm) and duration (e.g., 24 hours) used in the design and evaluation of STORMWATER management systems. Also see RETURN PERIOD.

99.4.2.15.11.3.7. DESIGNATED PLAN REVIEWER – A QUALIFIED PROFESSIONAL as defined herein, or organization such as the Allegheny County Conservation District, that has been designated by the TOWNSHIP to be the reviewer of SWM SITE PLANS for the TOWNSHIP, and shall be understood to be the reviewer where indicated as the TOWNSHIP within this ordinance.

99.4.2.15.11.3.8. DETENTION BASIN – An impoundment designed to collect and retard STORMWATER RUNOFF by temporarily storing the RUNOFF and releasing it at a

predetermined rate. DETENTION BASINS are designed to drain completely in a designed period after a rainfall event, and to become dry until the next rainfall event.

99.4.2.15.11.3.9. DETENTION VOLUME – The volume of RUNOFF that is captured and released into the WATERS OF THE COMMONWEALTH at a controlled rate.

99.4.2.15.11.3.10. DEP – The Pennsylvania Department of Environmental Protection.

99.4.2.15.11.3.11. DEVELOPMENT SITE (SITE) – See PROJECT SITE.

99.4.2.15.11.3.12. DISTURBED AREA – An unstabilized land area where an EARTH DISTURBANCE ACTIVITY is occurring or has occurred.

99.4.2.15.11.3.13. EARTH DISTURBANCE ACTIVITY – A construction or other human activity which disturbs the surface of the land, including, but not limited to: clearing and grubbing; grading; excavations; embankments; road maintenance; building construction; and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

99.4.2.15.11.3.14. EROSION – The natural process by which the surface of the land is worn away by water, wind, or chemical action.

99.4.2.15.11.3.15. EXISTING CONDITION – The dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

99.4.2.15.11.3.16. FEMA – Federal Emergency Management Agency.

99.4.2.15.11.3.17. FLOODPLAIN – Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area. Also includes areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by DEP).

99.4.2.15.11.3.18 FLOODWAY – The channel of the watercourse and those portions of the adjoining FLOODPLAINS that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the FLOODWAY is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year FLOODWAY, it is assumed-absent evidence to the contrary-that the FLOODWAY extends from the STREAM to 50 feet from the top of the bank of the STREAM.

99.4.2.15.11.3.19. FOREST MANAGEMENT AND TIMBER OPERATIONS – Planning and activities necessary for the management of forestland. These include conducting a timber inventory, preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation, and reforestation.

99.4.2.15.11.3.20. GREEN INFRASTRUCTURE – Systems and practices that use or mimic natural processes to infiltrate, evapotranspire, or reuse STORMWATER on the site where it is generated.

99.4.2.15.11.3.21. GROUNDWATER – Water beneath the earth's surface that supplies wells and springs and is within the saturated zone of soil and rock.

99.4.2.15.11.3.22. GROUNDWATER RECHARGE – The replenishment of existing natural underground water supplies from precipitation or overland flow.

99.4.2.15.11.3.23. HYDROLOGIC SOIL GROUP (HSG) – INFILTRATION rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGS (A, B, C, AND D) according to their minimum INFILTRATION rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or CONSERVATION DISTRICT offices. Soils become less pervious as the HSG varies from A to D (NRCS[1,2]).

99.4.2.15.11.3.24 IMPERVIOUS SURFACE (IMPERVIOUS AREA) – A surface that prevents the INFILTRATION of water into the ground. IMPERVIOUS SURFACES (or AREAS) shall include, but not be limited to: roofs; additional indoor living spaces, patios, garages, storage sheds and similar structures; and any new streets or sidewalks. Decks, parking areas, and driveway areas are counted as IMPERVIOUS AREAS if they directly prevent INFILTRATION.

99.4.2.15.11.3.25. INVASIVE SPECIES – DCNR defines invasive plants as those species that are not native to the state, grow aggressively, and spread and displace NATIVE VEGETATION. (see http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_010314.pdf for a list of INVASIVE SPECIES.

99.4.2.15.11.3.26. INFILTRATION – Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolated downward to recharge GROUNDWATER.

99.4.2.15.11.3.27. LAND DEVELOPMENT (DEVELOPMENT) – Inclusive of any or all of the following meanings; the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving (a) a group of two or more buildings or (b) the division or allocation of land or space between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features; (ii) any SUBDIVISION of land; (iii) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

99.4.2.15.11.3.28. LOW IMPACT DEVELOPMENT (LID) – Site design approaches and small-scale STORMWATER management practices that promote the use of natural systems for INFILTRATION, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and tore RUNOFF close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses STORMWATER through a variety of small, cost-effective landscape features located on-site.

99.4.2.15.11.3.29. NATIVE VEGETATION – Plant species that have historically grown in Pennsylvania and are not INVASIVE SPECIES as defined herein.

99.4.2.15.11.3.30 NRCS – USDA Natural Resources Conservation Service (previously SCS).

99.4.2.15.11.3.31. PEAK DISCHARGE – The maximum rate of STORMWATER RUNOFF from a specific storm event.

99.4.2.15.11.3.32. PERVIOUS AREA Any area not defined as impervious.

99.4.2.15.11.3.33. PROJECT SITE – The specific area of land where any REGULATED ACTIVITIES in the TOWNSHIP are planned, conducted, or maintained.

99.4.2.15.11.3.34. QUALIFIED PROFESSIONAL – Any person licensed by the Pennsylvania Department of State or otherwise qualified under Pennsylvania law to perform the work required by this Ordinance.

99.4.2.15.11.3.35. REGULATED ACTIVITIES – Any earth disturbance activities or any activities that involve the alteration or development of land in a manner that may affect STORMWATER RUNOFF.

99.4.2.15.11.3.36. REGULATED EARTH DISTURBANCE ACTIVITY – Activity involving earth disturbance subject to regulation under 25 Pa. Code 92, 25 Pa. Code 102, or the Clean Streams Law.

99.4.2.15.11.3.37. RELEASE RATE – The percentage of existing conditions peak rate of RUNOFF from a site or subarea to which the proposed conditions peak rate of RUNOFF must be reduced to protect downstream areas.

99.4.2.15.11.3.38. RELEASE RATE DISTRICT – A WATERSHED or portion of a WATERSHED for which a RELEASE RATE has been established by an adopted ACT 167 Stormwater Management Plan.

99.4.2.15.11.3.39. RETENTION VOLUME/REMOVED RUNOFF – The volume of RUNOFF that is captured and not

released directly into the surface WATERS OF THIS COMMONWEALTH during or after a storm event.

99.4.2.15.11.3.40. RETURN PERIOD – The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year RETURN PERIOD rainfall would be expected to occur on average once every 25 years; or stated in another way, the probability of a 25-year storm occurring in any one year is 0.04 (i.e., a 4% chance).

99.4.2.15.11.3.41. RIPARIAN BUFFER – A permanent vegetated area of trees and shrubs located adjacent to streams, lakes, ponds and WETLANDS.

99.4.2.15.11.3.42. RUNOFF - Any part of precipitation that flows over the land.

99.4.2.15.11.3.43 SEDIMENT – Soils or other materials transported by surface water as a product of EROSION.

99.4.2.15.11.3.44. SMALL PROJECT – Regulated activities that: 1) create additional impervious areas of greater than 400 square feet and less than **2,500 square feet**; or 2) the proposed area of disturbance is greater than one-quarter (0.25) acre (10,890 square feet) but less than one (1) acre (43,560 square feet). The impervious area on a specific property will be measured on a cumulative basis beginning on January 7, 2019.

99.4.2.15.11.3.45. STATE WATER QUALITY REQUIREMENTS – The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law.

99.4.2.15.11.3.46. STORMWATER – Drainage RUNOFF from the surface of the land resulting from precipitation or snow or ice melt.

99.4.2.15.11.3.47. STORMWATER MANAGEMENT FACILITY – Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects STORMWATER RUNOFF. Typical STORMWATER MANAGEMENT FACILITIES include but are not limited to: detention and retention basins; open

channels; storm sewers; pipes; and INFILTRATION facilities.

99.4.2.15.11.3.48. STORMWATER MANAGEMENT SITE PLAN – The plan prepared by the developer or the developer's representative indicating how STORMWATER RUNOFF will be managed at the development site in accordance with this Ordinance. STORMWATER MANAGEMENT SITE PLAN will be designated as SWM SITE PLAN throughout this Ordinance.

99.4.2.15.11.3.49. STREAM – A channel or conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

99.4.2.15.11.3.50. SUBDIVISION – As defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247.

99.4.2.15.11.3.51. USDA – United States Department of Agriculture.

99.4.2.15.11.3.52. WATERS OF THIS COMMONWEALTH – Any and all rivers, STREAMS, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, WETLANDS, ponds, springs, and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

99.4.2.15.11.3.53. WATERCOURSE – See STREAM.

99.4.2.15.11.3.54. WATERSHED – Region or land area drained by a river, WATERCOURSE, or other surface WATER OF THIS COMMONWEALTH to a downstream point.

99.4.2.15.11.3.55. WETLAND – Areas that are inundated or saturated by surface or GROUNDWATER at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.

ARTICLE III
STORMWATER MANAGEMENT STANDARDS
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.12. General Requirements

99.4.2.15.12.1. For all REGULATED ACTIVITIES, unless preparation of an SWM SITE PLAN is specifically exempted in §99.4.2.15.13.:

99.4.2.15.12.1.1. Preparation and implementation of an approved SWM SITE PLAN is required.

99.4.2.15.12.1.2. No REGULATED ACTIVITIES shall commence until the TOWNSHIP issues written approval of an SWM SITE PLAN, which demonstrates compliance with the requirements of this Ordinance.

99.4.2.15.12.2. SWM SITE PLANS approved by the TOWNSHIP, in accordance with §99.4.2.15.23., shall be on site throughout the duration of the regulated activity.

99.4.2.15.12.3. These standards apply to the landowner and any person engaged in REGULATED ACTIVITIES.

99.4.2.15.12.4. For all regulated EARTH DISTURBANCE ACTIVITIES, EROSION and SEDIMENT control BMPS shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual[4].), No. 363-2134-008, as amended and updated.

99.4.2.15.12.5. IMPERVIOUS AREAS:

99.4.2.15.12.5.1. The measurement of IMPERVIOUS AREAS shall include all of the IMPERVIOUS AREAS in the total proposed development even if development is to take place in stages.

99.4.2.15.12.5.2. For development taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.

99.4.2.15.12.5.3. For projects that add IMPERVIOUS AREA to a parcel, the total IMPERVIOUS AREA on the parcel is subject to the requirements of this Ordinance; except that the volume controls in §99.4.2.15.15. and the peak rate controls of §99.4.2.15.16. do not need to be retrofitted to existing IMPERVIOUS AREAS that are not being altered by the proposed regulated activity.

99.4.2.15.12.5.4. Any gravel or crushed stone surface, existing prior to the enactment of this Ordinance shall be presumed to be pervious.

99.4.2.15.12.5.5. Any areas proposed to be gravel or crushed stone shall be considered impervious.

99.4.2.15.12.5.6. The anticipated flooded surface area occurring within the site shall be considered impervious.

99.4.2.15.12.6. STORMWATER flows onto adjacent or downstream property shall not be created, increased, decreased, relocated, impeded, or otherwise altered without written notification of the affected property owner(s). Notification shall include a description of the proposed development and the STORMWATER flows that are being created, increased, decreased, relocated, impeded, or otherwise altered. Adjacent property shall at a minimum include any property having a shared boundary with the subject property of the SWM SITE PLAN, however, if in the judgement of the DESIGNATED PLAN REVIEWER additional properties are being affected, additional notifications may be required. Proof of notification (signed postal receipt for example) shall be included as part of the SWM Plan submission to the TOWNSHIP. Such STORMWATER flows shall be subject to the requirements of this Ordinance.

99.4.2.15.12.7. All REGULATED ACTIVITIES shall include such measures as necessary to:

99.4.2.15.12.7.1. Protect health, safety, and property.

99.4.2.15.12.7.2. Meet the water quality goals of this Ordinance by implementing measures to:

99.4.2.15.12.7.2.1. Minimize disturbance to FLOODPLAINS, WETLANDS, and wooded areas.

99.4.2.15.12.7.2.2. Maintain or extend RIPARIAN BUFFERS.

99.4.2.15.12.7.2.3. Avoid erosive flow conditions in natural flow pathways.

99.4.2.15.12.7.2.4. Minimize thermal impacts to waters of this Commonwealth.

99.4.2.15.12.7.2.5. Disconnect IMPERVIOUS SURFACES by directing RUNOFF to pervious areas, wherever possible.

99.4.2.15.12.7.3. Incorporate methods described in the *Pennsylvania Stormwater Best Management Practices Manual* (BMP Manual[3]). If methods other than GREEN INFRASTRUCTURE and LID methods are proposed to achieve the volume and rate controls required under this Ordinance, the SWM SITE PLAN must include a detailed justification, acceptable to the DESIGNATED PLAN REVIEWER, demonstrating that the use of LID and GREEN INFRASTRUCTURE is not practicable.

99.4.2.15.12.8. INFILTRATION BMPs should be dispersed throughout the PROJECT SITE at strategic locations, made as shallow as practicable, and located to maximize use of natural on-site INFILTRATION features while still meeting the other requirements of this Ordinance.

99.4.2.15.12.9. Normally dry, open top, storage facilities should completely drain both the volume control and rate control capacities over a period of time not less than 24 and not more than 72 hours from the end of the DESIGN STORM.

99.4.2.15.12.10. The DESIGN STORM precipitation depths to be used in the analysis of peak rates of discharge shall be as obtained in PennDOT's Drainage Manual, Publication 584, Appendix 7A; or obtained from the latest version of the Precipitation-Frequency Atlas of the United States, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 145 can be accessed at: http://hdsc.nws.noaa.gov/hdsc/pfds/.

99.4.2.15.12.11. For all REGULATED ACTIVITIES, SWM BMPs shall be designed, implemented, operated, and maintained to meet

the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act.

99.4.2.15.12.12. Various BMPs and their design standards are listed in the BMP Manual[3].

99.4.2.15.12.13. The Township may, after consultation with DEP, approve measures for meeting the STATE WATER QUALITY REQUIREMENTS other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, state law including, but not limited to, the Clean Streams Law.

99.4.2.15.12.14. The minimum YARD requirements for any STORMWATER MANAGEMENT FACILITY or BMP shall be as follows:

99.4.2.15.12.14.1. FRONT YARD – fifteen (15) feet.

99.4.2.15.12.14.2. SIDE YARD – six (6) feet

99.4.2.15.12.14.3. REAR YARD – fifteen (15) feet.

99.4.2.15.12.14.4. After review by the TOWNSHIP ENGINEER, the TOWNSHIP may require that the setback distance be increased based upon factors such as topography, soil conditions, the size of structures, the location of structures, and discharge rates.

99.4.2.15.13. Exemptions

99.4.2.15.13.1. REGULATED ACTIVITIES that result in cumulative earth disturbances less than one (1) acre are exempt from the requirements in §99.4.2.15.18 of this ordinance except as provided in §99.4.2.15.13.2. and §99.4.2.15.14. below.

99.4.2.15.13.2. Earth disturbances between one-quarter (0.25) acre (10,890 square feet) and one (1) acre of earth disturbance must submit a SWM SITE PLAN to the TOWNSHIP which shall consist of the following items and related supportive material needed to determine compliance with §99.4.2.15.15. through §99.4.2.15.17.

99.4.2.15.13.2.1. General description of proposed STORMWATER management techniques, including construction specifications of the materials to be used for STORMWATER MANAGEMENT FACILITIES.

99.4.2.15.13.2.2. An EROSION and SEDIMENT control plan, including all reviews and letters of adequacy from the CONSERVATION DISTRICT where appropriate.

99.4.2.15.13.2.3. Limits of earth disturbance, including the type and amount of IMPERVIOUS AREA that is proposed; proposed structures, roads, paved areas, and buildings; and a statement, signed by the APPLICANT, acknowledging that any revision to the approved drainage plan must be approved by the TOWNSHIP, and that a revised EROSION and SEDIMENT control plan must be submitted to the TOWNSHIP or CONSERVATION DISTRICT for approval.

99.4.2.15.13.2.4. All STORMWATER management facilities must be located on a plan and described in detail; and all calculations, assumptions, and criteria used in the design of the STORMWATER management facilities must be shown.

99.4.2.15.13.3. AGRICULTURAL ACTIVITY is exempt from the SWM SITE PLAN preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

99.4.2.15.13.4. FOREST MANAGEMENT AND TIMBER OPERATIONS are exempt from the SWM SITE PLAN preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

99.4.2.15.13.5. Roadway resurfacing and maintenance projects, which do not increase IMPERVIOUS AREA, and underground infrastructure projects are exempt from the provisions of this Ordinance, provided the activities meet the requirements of all other Municipal, State and Federal requirements.

99.4.2.15.13.6. Exemptions from any provisions of this Ordinance shall not relieve the APPLICANT from the requirements in §99.4.2.15.12.4. through §99.4.2.15.12.10.

99.4.2.15.13.7. The TOWNSHIP may deny or revoke any exemption pursuant to this Section at any time for any project that the TOWNSHIP believes may pose a threat to public health and safety or the environment.

99.4.2.15.13.8. Voluntary Green Stormwater Infrastructure (GSI) retrofit projects that are solely intended to better manage RUNOFF from existing development and are not part of new development or redevelopment, are exempt from the STORMWATER management provisions of this Ordinance. This does not exempt such projects from any other municipal, state, or federal regulation.

99.4.2.15.14. SMALL PROJECTS

99.4.2.15.14.1. Table 1 and Table 2 present the TOWNSHIP's STORMWATER management requirements for SMALL PROJECTS. For projects that propose additional IMPERVIOUS AREA or earth disturbance to a parcel, the total proposed IMPERVIOUS AREA and total proposed earth disturbance on the parcel is subject to the requirements of this Ordinance. IMPERVIOUS AREA is described in Section 99.4.2.15.12.5.

Table 1 – Stormwater Management Requirements for Increase in Impervious Area

No.	Sq. Ft. of Proposed Impervious Surface	Stormwater Management Requirement
1	<400	No requirements if there were no previous impervious surface additions.
2	400 to 2,500 (Small Project)	Capture and detain the first 2" of any storm event
3	>2,500	Comply with requirements of this ordinance

Table 2 – Stormwater Management Requirements for Proposed Earth Disturbance

No.	Sq. Ft. of Proposed Earth Disturbance	Stormwater Management Requirement
1	<10,890	No requirements if there were no previous impervious surface additions.
2	10,890 to 43,559 (Small Project)	Capture and detain the first 2" of any storm event
3	>43,559	Comply with requirements of this ordinance

99.4.2.15.14.2. Stormwater management for SMALL PROJECTS will consist of capturing and detaining the first two inches of any storm event. For SMALL PROJECTS, consider the following:

Two inches of rain results in the following volumes that need to be captured and detained:

- 400 sq. ft. * 2 in./(12 in./ft.) * 7.48 gal/cu. ft. = 499 gallons of detention storage.

- 2,500 sq. ft. * 2 in./(12 in./ft.) * 7.48 gal/cu. ft. = 3,117 gallons of detention storage.

Therefore, SMALL PROJECT detention requirements range from 499 gallons to 3,117 gallons.

99.4.2.15.14.3. Capture and detention can be accomplished by a variety of methods, including, but not limited to:

99.4.2.15.14.3.1. Rain Barrels (could be drained through a soaker hose)

99.4.2.15.14.3.2. Rain Gardens.

99.4.2.15.14.3.3. Stone Sumps (Dry Wells) and Infiltration Trenches filled with clean, AASHTO No. 3 stone, 40% void space.

99.4.2.15.14.3.4. Other Methods as approved by the TOWNSHIP staff.

99.4.2.15.14.3.5. A combination of methods.

99.4.2.15.14.4. In all cases, the detention method shall be designed to drain all accumulated RUNOFF not less than 24 hours and not more than 72 hours after the end of the storm event. Appropriate soil percolation conditions must be available for stone sumps and rain gardens, and demonstrated by percolation tests.

99.4.2.15.14.5. A maintenance agreement must be signed by the property owner to ensure the proper, continual inspection and maintenance of the capture and detention method.

99.4.2.15.14.6. The property owner shall submit the following STORMWATER management information for review by the TOWNSHIP staff:

99.4.2.15.14.6.1. A written description of the proposed project, including the dimensions of all proposed IMPERVIOUS SURFACES.

99.4.2.15.14.6.2. A scale drawing showing existing and proposed features of the property.

99.4.2.15.14.6.3. A written description of the proposed STORMWATER management methods.

99.4.2.15.14.6.4. Dimensioned drawings of the proposed STORMWATER management methods and their locations.

99.4.2.15.14.6.5. A list of proposed IMPERVIOUS SURFACES and their square footage.

99.4.2.15.14.6.6. Supporting documentation, such as assumptions, calculations, rain barrel size, stone size, percolation tests, etc.

99.4.2.15.14.6.7. Draft operation and maintenance agreement.

99.4.2.15.14.7. Construction of the proposed improvements shall not begin prior to receiving approval of the STORMWATER management plan from the TOWNSHIP.

99.4.2.15.15. Volume Controls

99.4.2.15.15.1. The GREEN INFRASTRUCTURE and LOW IMPACT DEVELOPMENT practices provided in the BMP Manual[3] shall be utilized for REGULATED ACTIVITIES wherever possible. Water volume controls shall be implemented using the *Design Storm Method* in 99.4.2.15.15.1.1. or the *Simplified Method* in 99.4.2.15.15.1.2. below. Water volume controls shall be implemented using the DESIGN STORM Method in 99.4.2.15.15.1.1. or the Simplified Method in 99.4.2.15.15.1.2. below, or alternative design criteria as allowed by PA Code Title 25, Chapter 102.

99.4.2.15.15.1.1. The *Design Storm Method* (CG-1 in the BMP Manual[3]) is applicable as a method to any size of regulated activity. This method requires detailed modeling based on site conditions. The following shall be incorporated into the CG-1 method:

99.4.2.15.15.1.1.1. Do not increase the post-development total RUNOFF volume for all storms equal to or less than the 2-year 24-hour duration precipitation.

99.4.2.15.15.1.1.2. At least the first one inch of RUNOFF from the net increase in IMPERVIOUS SURFACES shall be permanently removed from the RUNOFF flow, ie., it shall not be released into the surface waters of this Commonwealth. Removal

options include reuse, evaporation, transpiration, and INFILTRATION. If the developer provides justification that the listed removal options are not feasible, and the DESIGNATED PLAN REVIEWER agrees, RUNOFF shall be detained in a facility designed for a 24 to 72-hour dewatering time in an area with a dedicated STORMWATER system (not contributory to a combined sewer system) and shall be detained in a facility designed for a 72-hour dewatering time in an area contributory to a combined sewer system before discharge to local STORMWATER systems or the environment.

99.4.2.15.15.1.1.3. For modeling purposes:

99.4.2.15.15.1.1..3.1. Existing (predevelopment) non-forested pervious areas must be considered meadow in good condition.

99.4.2.15.15.1.1.3.2. 20% of existing IMPERVIOUS AREA, when present, shall be considered meadow in good condition in the model for EXISTING CONDITIONS.

99.4.2.15.15.1.2. The *Simplified Method* (CG-2 in the BMP Manual[3]) provided below is independent of site conditions and should be used if the *Design Storm Method* is not followed. This method is not applicable to REGULATED ACTIVITIES greater than one acre or for projects that require design of STORMWATER storage facilities. For new IMPERVIOUS SURFACES:

99.4.2.15.15.1.2.1. STORMWATER facilities shall capture at least the first two (2) inches of RUNOFF from the net increase in IMPERVIOUS SURFACES.

99.4.2.15.15.1.2.2. At least the first one inch of RUNOFF from the net increase in IMPERVIOUS SURFACES shall be permanently removed from the RUNOFF flow, i.e., it shall not be released into the surface waters of this Commonwealth. Removal options include reuse, evaporation, transpiration, and INFILTRATION. If the developer provides justification that the listed removal options are not feasible, and the DESIGNATED PLAN REVIEWER

agrees, RUNOFF shall be detained in a facility designed for a 24-hour dewatering time in an area with a dedicated STORMWATER system (not contributory to a combined sewer system) and shall be detained in a facility designed for a 72-hour dewatering time in an area contributory to a combined sewer system before discharge to local STORMWATER systems or the environment.

99.4.2.15.15.1.2.3. Wherever possible, INFILTRATION facilities should be designed to accommodate INFILTRATION of the entire permanently removed RUNOFF; however, in all cases at least the first 0.5 inch of the permanently REMOVED RUNOFF should be infiltrated.

99.4.2.15.15.1.2.4. This method is exempt from the requirements of §99.4.2.15.16., Rate Controls.

99.4.2.15.16. Rate Controls

99.4.2.15.16.1. For areas not covered by a RELEASE RATE map from an approved ACT 167 Stormwater Management Plan: Post-development discharge rates shall not exceed the pre-development discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storm events. This Pre-development to Post-development control is not to be misconstrued as the same as the "Conditional Direct Discharge" areas on the RELEASE RATE maps. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the APPLICANT shall provide additional controls as necessary to satisfy the peak rate of discharge requirement. Peak flows should be computed using the methods included in the Chapter titled "Stormwater Calculations and Methodology" of the PADEP Stormwater Management BMP Manual.

99.4.2.15.16.2. For areas covered by a RELEASE RATE map from an approved ACT 167 Stormwater Management Plan: For the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24 hour storm events, the post-development PEAK DISCHARGE rates will follow the applicable approved RELEASE RATE maps. For any areas not shown on the RELEASE RATE maps, the post-development discharge rates shall not exceed the pre-development discharge rates for the specified design events. Peak flows should be computed using the methods

included in Chapter 8 of the PADEP Stormwater Management BMP Manual.

99.4.2.15.17. RIPARIAN BUFFERS

99.4.2.15.17.1. In order to protect and improve water quality, a RIPARIAN BUFFER Easement shall be created and recorded as part of any SUBDIVISION or LAND DEVELOPMENT that encompasses a RIPARIAN BUFFER. The intent of this ordinance in establishing a RIPARIAN BUFFER is to protect and improve STREAM water quality. The RIPARIAN BUFFER is intended to slow overland flow to the STREAM through the presence of native grasses, trees and shrubs, allowing INFILTRATION/GROUNDWATER RECHARGE; causing deposition of sediment, nutrients, pesticides, and other pollutants in the buffer rather than in the STREAM; and reducing EROSION by providing STREAM bank stabilization. The trees provide shade for STREAMS; keeping waters cooler and reducing evaporation.

99.4.2.15.17.2. Except as required by PA Code Title 25 Chapter 102, the RIPARIAN BUFFER Easement shall be required for all STREAMS (as defined in Article II) with a contributing WATERSHED area of greater than ten (10) acres. The RIPARIAN BUFFER Easement shall be measured to be a minimum of 35 feet from the top of the streambank (on each side).

99.4.2.15.17.3. Minimum Management Requirements for RIPARIAN BUFFERS.

99.4.2.15.17.3.1. No use or construction within the RIPARIAN BUFFER shall be permitted that is inconsistent with the intent of the RIPARIAN BUFFER as described in 99.4.2.15.17.1.

99.4.2.15.17.3.2. Existing NATIVE VEGETATION shall be protected and maintained within the RIPARIAN BUFFER Easement.

99.4.2.15.17.3.3. Whenever practicable, invasive vegetation shall be actively removed and the RIPARIAN BUFFER Easement shall be planted with native trees, shrubs and other vegetation to create a diverse native plant community appropriate to the intended ecological context of the site.

99.4.2.15.17.4. The RIPARIAN BUFFER Easement shall be enforceable by the TOWNSHIP and shall be recorded in the

appropriate County Recorder of Deeds Office, so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for the continued private ownership and shall count toward the minimum lot area required by Zoning, unless otherwise specified in the municipal Zoning Ordinance.

99.4.2.15.17.5. Any permitted use within the RIPARIAN BUFFER Easement shall be conducted in a manner that will maintain the extent of the existing 100-year FLOODPLAIN, improve or maintain the STREAM stability, and preserve and protect the ecological function of the FLOODPLAIN.

99.4.2.15.17.6. STORMWATER drainage pipes shall be permitted within the RIPARIAN BUFFER Easement, but they shall cross the Easement in the shortest practical distance. Other structural STORMWATER management facilities are not permitted within the RIPARIAN BUFFER Easement.

99.4.2.15.17.7. The following conditions shall apply when public and/or private recreation trails are permitted by the TOWNSHIP within RIPARIAN BUFFERS:

> 99.4.2.15.17.7.1. It is preferred that trails be designed to be permeable and for non-motorized use only; however, impermeable trails are permitted provided they have adequate drainage.
>
> 99.4.2.15.17.7.2. Trails shall be designed to have the least impact on native plant species and other sensitive environmental features.

99.4.2.15.17.8. Septic drainfields and sewage disposal systems shall not be permitted within the RIPARIAN BUFFER Easement and shall comply with setback requirements established under 25 Pa. Code Chapter 73.

99.4.2.15.17.9. Underground utilities shall be permitted within the RIPARIAN BUFFER Easement; however, work shall be performed to minimize disturbance area and removal of trees. Restoration within the RIPARIAN BUFFER Easement shall be with native species of trees, grasses, and other plantings. One tree shall be planted for each tree removed and the restoration shall be designed by a Registered Professional with the requisite experience. Aboveground utilities shall only be permitted to cross the Easement perpendicular to the Easement or in the shortest practical distance. Existing utilities may remain and be maintained as required.

ARTICLE IV
STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.18 Plan Requirements

99.4.2.15.18.1. Appropriate sections from the TOWNSHIP'S Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the SWM SITE PLANS. In instances where the TOWNSHIP lacks Subdivision and Land Development regulations, the content of SWM SITE PLANS shall follow the Allegheny County Subdivision and Land Development Ordinance. The TOWNSHIP shall not approve any SWM SITE PLAN that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM SITE PLAN is found to be deficient, the TOWNSHIP may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, the TOWNSHIP may accept submission of modifications.

The following items shall be included in the SWM SITE PLAN:

99.4.2.15.18.1.1. Provisions for permanent access or maintenance easements for all physical SWM BMPs, such as ponds and INFILTRATION structures, as necessary to implement the Operation and Maintenance (O&M) Plan discussed in §99.4.2.15.18.1.3.9. below.

99.4.2.15.18.1.2. The following signature block for the TOWNSHIP:
"The Township Engineer, on this date (Signature date), has reviewed and hereby certifies that the SWM SITE PLAN meets all design standards and criteria of the Municipal Ordinance No. (number assigned to ordinance), except where waivers have been granted as noted on the Plan. The review is based on a survey and plan prepared by others and assumes that all information is correct and valid as submitted."

99.4.2.15.18.1.3. The SWM SITE PLAN shall provide the following information:

99.4.2.15.18.1.3.1. The overall STORMWATER management concept for the project.

99.4.2.15.18.1.3.2. A determination of site conditions in accordance with the BMP Manual3. A detailed site evaluation shall be completed for projects proposed in environmentally sensitive areas, such as brownfields.

99.4.2.15.18.1.3.3. STORMWATER RUNOFF design computations and documentation as specified in this Ordinance, or as otherwise necessary to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance, including the recommendations and general requirements in 99.4.2.15.12.1.

99.4.2.15.18.1.3.4. Expected project time schedule.

99.4.2.15.18.1.3.5. A soil EROSION and SEDIMENT control plan, where applicable, as prepared for and submitted to the approval authority.

99.4.2.15.18.1.3.6. The effect of the project (in terms of RUNOFF volumes, water quality, and peak flows) on surrounding properties and aquatic features and on any existing STORMWATER conveyance system that may be affected by the project.

99.4.2.15.18.1.3.7. Plan and profile drawings of all SWM BMPs, including drainage structures, pipes, open channels, and swales.

99.4.2.15.18.1.3.8. SWM SITE PLAN shall show the locations of existing and proposed on-lot wastewater facilities and water supply wells, property boundaries, existing and proposed topography, point(s) of interest, utilities, and potential utility conflicts.

99.4.2.15.18.1.3.9. The SWM SITE PLAN shall include an O&M Plan for all existing and proposed physical STORMWATER MANAGEMENT FACILITIES. This plan shall address long-term ownership and responsibilities for O&M including type and schedule/frequency of maintenance activities, personnel and equipment requirements, estimated annual maintenance costs, and method of financing continuing O&M.

99.4.2.15.18.1.3.10. A justification, acceptable to the DESIGNATED PLAN REVIEWER, must be included in the SWM SITE PLAN if BMPs other than GREEN INFRASTRUCTURE methods and LID practices are proposed to achieve the volume, rate and water quality controls under this Ordinance.

99.4.2.15.19. Plan Submission

99.4.2.15.19.1. Up to four copies of the SWM SITE PLAN shall be submitted as follows:

99.4.2.15.19.1.1. Two copies to the TOWNSHIP.

99.4.2.15.19.1.2. One copy to the municipal ENGINEER (when applicable).

99.4.2.15.19.1.3. One copy to the Allegheny County CONSERVATION DISTRICT (when requested by the District).

99.4.2.15.20. Plan Review

99.4.2.15.20.1. The TOWNSHIP has designated the TOWNSHIP ENGINEER as the DESIGNATED PLAN REVIEWER of SWM SITE PLANS for the TOWNSHIP, and shall be understood to be the reviewer where indicated as the TOWNSHIP within this Ordinance.

99.4.2.15.20.2. SWM SITE PLANS shall be reviewed by the TOWNSHIP for consistency with the provisions of this Ordinance.

99.4.2.15.20.3. The TOWNSHIP shall notify the APPLICANT in writing within 45 days whether the SWM SITE PLAN is approved or disapproved or requires additional documentation. If the SWM SITE PLAN involves a Subdivision and Land Development Plan, the notification shall occur within the time period allowed by the Municipalities Planning Code (90 days). If a longer notification period is provided by other statute, regulation, or ordinance, the APPLICANT will be so notified by the TOWNSHIP.

99.4.2.15.20.4. For any SWM SITE PLAN that proposes to use any BMPs other than GREEN INFRASTRUCTURE and LID practices to achieve the volume and rate controls required under this Ordinance, the TOWNSHIP will not approve the SWM SITE PLAN

unless it determines that GREEN INFRASTRUCTURE and LID practices are not practicable.

99.4.2.15.20.5. If the TOWNSHIP disapproves the SWM SITE PLAN, the TOWNSHIP will state the reasons for the disapproval in writing. The TOWNSHIP also may approve the SWM SITE PLAN with conditions and, if so, shall provide the acceptable conditions for approval in writing.

99.4.2.15.20.6. The applicable review fee, in accord with Chapter 57, Fees, must accompany a resubmission of a disapproved SWM SITE PLAN.

99.4.2.15.21. Modification of Plans

99.4.2.15.21.1. A modification to a submitted SWM SITE PLAN that involves a change in SWM BMPs or techniques, or that involves the relocation or redesign of SWM BMPs, or that is necessary because soil or other conditions are not as stated on the SWM SITE PLAN, as determined by the DESIGNATED PLAN REVIEWER, shall require a resubmission of the modified SWM SITE PLAN in accordance with this Article.

99.4.2.15.22. Resubmission of Disapproved SWM SITE PLANS

99.4.2.15.22.1. A disapproved SWM SITE PLAN may be resubmitted, with the revisions addressing the TOWNSHIP's concerns, to the TOWNSHIP in accordance with this Article. The applicable review fee, in accord with Chapter 57, Fees, must accompany a resubmission of a disapproved SWM SITE PLAN.

99.4.2.15.23. Authorization to Construct and Term of Validity

99.4.2.15.23.1. The TOWNSHIP's approval of an SWM SITE PLAN authorizes the REGULATED ACTIVITIES contained in the SWM SITE PLAN for a maximum term of validity of five (5) years following the date of approval. The TOWNSHIP may specify a term of validity shorter than five (5) years in the approval for any specific SWM SITE PLAN. Terms of validity shall commence on the date the TOWNSHIP signs the approval for an SWM SITE PLAN. If an approved SWM SITE PLAN is not completed according to §99.4.2.15.24. within the term of validity, then the TOWNSHIP may consider the SWM SITE PLAN disapproved and may revoke any and all permits. SWM SITE PLANS that are considered disapproved by the TOWNSHIP shall be resubmitted in accordance with §99.4.2.15.22. of this Ordinance.

99.4.2.15.24. Record Drawings, Completion Certificate, and Final Inspection

99.4.2.15.24.1. The developer shall be responsible for providing record drawings of all SWM BMPs included in the approved SWM SITE PLAN. The record drawings and an explanation of any discrepancies with the construction plans shall be submitted to the TOWNSHIP.

99.4.2.15.24.2. The record drawing submission shall include a certification of completion signed by a QUALIFIED PROFESSIONAL verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. The latitude and longitude coordinates for all permanent SWM BMPs must also be submitted, at the central location of the BMPs. If any licensed QUALIFIED PROFESSIONALS contributed to the construction plans, then a licensed QUALIFIED PROFESSIONAL must sign the completion certificate.

99.4.2.15.24.3. The TOWNSHIP may conduct inspections during construction as it deems appropriate. If inspections performed by the TOWNSHIP reveal deficiencies from the submitted and approved SWM SITE PLAN, the TOWNSHIP may request corrective actions. Any corrective action shall be at the cost of the STORMWATER facility owner.

99.4.2.15.24.4. After receipt of the completion certification by the TOWNSHIP, the TOWNSHIP may conduct a final inspection.

ARTICLE V
OPERATION AND MAINTENANCE
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.25. Responsibilities of Developers and Landowners

99.4.2.15.25.1. The TOWNSHIP shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM SITE PLAN. The TOWNSHIP may require a dedication of such facilities as part of the requirements for approval of the SWM SITE PLAN. Such a requirement is not an indication that the TOWNSHIP will accept the facilities. The TOWNSHIP reserves the right to reject or accept the ownership and operating responsibility for any portion of the STORMWATER management controls.

99.4.2.15.25.2. Facilities, areas, or structures used as SWM BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.

99.4.2.15.25.3. The O&M Plan shall be recorded as a restrictive deed covenant that runs with the land.

99.4.2.15.25.4. The TOWNSHIP may take enforcement actions against an owner for any failure to satisfy the provisions of this Article.

99.4.2.15.26. Operation and Maintenance Agreements

99.4.2.15.26.1. Prior to final approval of the SWM SITE PLAN, the property owner shall sign and record an Operation and Maintenance (O&M) Agreement covering all STORMWATER control facilities which are to be privately owned.

99.4.2.15.26.1.1. The owner, successor and assigns shall maintain all facilities in accordance with the approved maintenance schedule in the O&M Agreement.

99.4.2.15.26.1.2. The owner shall convey to the TOWNSHIP conservation easements to assure access for periodic inspections by the TOWNSHIP and maintenance, as necessary.

99.4.2.15.26.1.3. The owner shall keep on file with the TOWNSHIP the name, address, and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information shall be submitted by the owner to the TOWNSHIP within ten (10) working days of the change.

99.4.2.15.26.2. The owner is responsible for operation and maintenance (O&M) of the SWM BMPs. If the owner fails to adhere to the O&M Agreement, the TOWNSHIP may perform the services required and charge the owner appropriate fees. Nonpayment of fees may result in a lien against the property.

99.4.2.15.27. Performance Guarantee

99.4.2.15.27.1. For SWM SITE PLANS that involve SUBDIVISION and LAND DEVELOPMENT, the APPLICANT shall provide a financial guarantee to the TOWNSHIP for the timely

installation and proper construction of all STORMWATER management controls as required by the approved SWM SITE PLAN and this Ordinance in accordance with the provisions of Sections 509, 510, and 511 of the Pennsylvania Municipalities Planning Code.

ARTICLE VI
FEES AND EXPENSES
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.28. General

99.4.2.15.28.1. The TOWNSHIP shall charge a STORMWATER management plan review fee in accordance with the fees schedule as established Chapter 57, Fees. The review fee may include, but not be limited to, costs for the following:

99.4.2.15.28.1.1. Administrative/clerical processing.

99.4.2.15.28.1.2. Review of the SWM SITE PLAN.

99.4.2.15.28.1.3. Review of a SWM SITE PLAN resubmission.

99.4.2.15.28.1.4. Attendance at meetings.

99.4.2.15.28.1.5. Inspections.

ARTICLE VII
PROHIBITIONS
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.29. Prohibited Discharges and Connections

99.4.2.15.29.1. Any drain or conveyance, whether on the surface or subsurface, that allows any non-STORMWATER discharge including sewage, process wastewater, and wash water to enter a regulated small MS4 or to enter the surface WATERS OF THIS COMMONWEALTH is prohibited.

99.4.2.15.29.2. No person shall allow, or cause to allow, discharges into a regulated small MS4, or discharges into WATERS OF THIS COMMONWEALTH, which are not composed entirely of STORMWATER, except (1) as provided in §99.4.2.15.29.3. and (2) discharges authorized under a state or federal permit.

99.4.2.15.29.3. The following discharges are authorized unless they are determined to be significant contributors to pollution of a regulated small MS4 or to the WATERS OF THIS COMMONWEALTH.

99.4.2.15.29.3.1. Discharges or flows from firefighting activities.

99.4.2.15.29.3.2. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC).

99.4.2.15.29.3.3. Non-contaminated irrigation water, water from lawn maintenance, landscape drainage and flows from riparian habitats and WETLANDS.

99.4.2.15.29.3.4. Diverted STREAM flows and springs.

99.4.2.15.29.3.5. Non-contaminated pumped ground water and water from foundation and footing drains and crawl space pumps.

99.4.2.15.29.3.6. Non-contaminated HVAC condensation and water from geothermal systems.

99.4.2.15.29.3.7. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized.

99.4.2.15.29.3.8. Non-contaminated hydrostatic test water discharges, if such discharges do not contain detectable concentrations of TRC.

99.4.2.15.29.3.9. Dechlorinated swimming pool and hot tub discharges, as long as the PADEP guidelines for swimming pool water discharge are followed.

99.4.2.15.29.4. In the event that the TOWNSHIP or DEP determines that any of the discharges identified in §99.4.2.15.28.3. significantly contribute pollutants to a regulated small MS4 or to the WATERS OF THIS COMMONWEALTH, the TOWNSHIP or DEP will notify the responsible person(s) to cease the discharge.

99.4.2.15.30. Roof Drains and Sump Pumps

99.4.2.15.30.1. Roof drains and sump pumps shall discharge to INFILTRATION or vegetative BMPs wherever feasible.

99.4.2.15.31. Alteration of SWM BMPs

99.4.2.15.31.1. No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, drainage easements, or structures that were installed as a requirement of this Ordinance without the written approval of the TOWNSHIP.

ARTICLE VIII
ENFORCEMENT AND PENALTIES
[Added in its entirety 1-7-19 by Ord. No. 2201; Amended 6-3-19 by Ord. No. 2203]

99.4.2.15.32. Right of Entry

99.4.2.15.32.1. Upon presentation of proper credentials, the TOWNSHIP or its designated agent may enter at reasonable times upon any property within the TOWNSHIP to inspect the condition of the STORMWATER structures and facilities in regard to any aspect regulated by this Ordinance.

99.4.2.15.33. Inspection

99.4.2.15.33.1. The landowner or the owner's designee (including the TOWNSHIP for dedicated and owned facilities) shall inspect SWM BMPs, facilities and/or structures installed under this Ordinance according to the following frequencies, at a minimum, to ensure the BMPs, facilities and/or structures continue to function as intended:

99.4.2.15.33.1.1. Annually for the first five (5) years.

99.4.2.15.33.1.2. Once every three (3) years thereafter.

99.4.2.15.33.1.3. During or immediately after the cessation of a 10-year or greater storm. Inspections should be conducted during or immediately following precipitation events. A written inspection report shall be created to document each inspection. The inspection report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of the BMP, facility or structure inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the

TOWNSHIP within 30 days following completion of the inspection.

99.4.2.15.34. Enforcement

99.4.2.15.34.1. It shall be unlawful for a person to undertake any regulated activity except as provided in an approved SWM SITE PLAN, unless specifically exempted in §99.4.2.15.13.

99.4.2.15.34.2. It shall be unlawful to violate §99.4.2.15.31. of this Ordinance.

99.4.2.15.34.3. Inspections regarding compliance with the SWM SITE PLAN are a responsibility of the TOWNSHIP.

99.4.2.15.35. Suspension and Revocation

99.4.2.15.35.1. Any approval or permit issued by the TOWNSHIP pursuant to this Ordinance may be suspended or revoked for:

99.4.2.15.35.1.1. Non-compliance with or failure to implement any provision of the approved SWM SITE PLAN or O&M Agreement.

99.4.2.15.35.1.2. A violation of any provision of this Ordinance or any other applicable law, ordinance, rule, or regulation relating to the Regulated Activity.

99.4.2.15.35.1.3. The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard, nuisance, pollution, or endangers the life or property of others.

99.4.2.15.35.2. A suspended approval may be reinstated by the TOWNSHIP when:

99.4.2.15.35.2.1. The TOWNSHIP has inspected and approved the corrections to the violations that caused the suspension.

99.4.2.15.35.2.2. The TOWNSHIP is satisfied that the violation has been corrected.

99.4.2.15.35.3. An approval that has been revoked by the TOWNSHIP cannot be reinstated. The APPLICANT may apply for a new approval under the provisions of this Ordinance.

99.4.2.15.35.4. If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the TOWNSHIP may provide a limited time period for the owner to correct the violation. In these cases, the TOWNSHIP will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the TOWNSHIP may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

99.4.2.15.36. Penalties

99.4.2.15.36.1. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense, and upon conviction, shall be subject to the provisions of Chapter 5, Enforcement of Ordinances; Penalties. The continuation of such violation for each successive day shall constitute a separate offense, and the person or persons allowing or permitting the continuation of a violation may be punished for each separate offense as provided in said Chapter 5.

99.4.2.15.36.2. In addition, the TOWNSHIP may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus, or other appropriate forms of remedy or relief.

99.4.2.15.37. Appeals

99.4.2.15.37.1. Any person aggrieved by any action of the TOWNSHIP or its designee, relevant to the provisions of this Ordinance, may appeal to the TOWNSHIP within 30 days of that action.

99.4.2.15.37.2. Any person aggrieved by any decision of the TOWNSHIP, relevant to the provisions of this Ordinance, may appeal to the County Court of Common Pleas in the county where the activity has taken place within 30 days of the TOWNSHIP's decision.

ARTICLE IX
REFERENCES
[Added in its entirety 1-7-19 by Ord. No. 2201

1. U.S. Department of Agriculture, National Resources Conservation Service (NRCS). *National Engineering Handbook*. Part 630; Hydrology, 1969-2001. Originally published as the *National Engineering Handbook*, Section 4: Hydrology. Available from the NRCS online at: http://www.nrcs.usda.gov/.

2. U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, 2nd Edition. Washington, D.C.

3. Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006), as amended and updated. *Pennsylvania Stormwater Best Management Practices Manual.* Harrisburg, PA.

4. Pennsylvania Department of environmental Protection. No. 363-2134-008 (March 31, 2012), as amended and updated. *Erosion and Sediment Pollution Control Program Manual*. Harrisburg, PA.

5. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States*, Atlas 14, Volume 2, Version 3.0, Silver Spring, Maryland. Internet address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

99.4.3. **Sanitary Sewer System**

99.4.3.1. **Sanitary Sewer Pipe** – sanitary sewer pipe shall be:

99.4.3.1.1. PVC (Polyvinyl Chloride), conforming to ASTM D-3034 or

99.4.3.1.2. ABS (acrylconitrille-Butadiens-Styrene) Composite Sewer Pipe (Truss Pipe), conforming to ASTM D-2751 or

99.4.3.1.3. Any alternative or exceptions to these standards of equal or better quality must be approved by the TOWNSHIP MANAGER or his designated representative with the advice of the ENGINEER.

99.4.3.2. **Sanitary Manholes** – see 99.4.2.3.

99.4.3.3. **Sanitary Sewer Lateral Connections** – see 99.4.2.4.

99.4.3.4. **Cradles and Reinforcements for Sewers** – see 99.4.2.6.

99.4.3.5. **Concrete Encasement and Anchors for Sewers** – see 99.4.2.8.

99.4.3.6. **Connections for Drop Manholes** – see 99.4.2.9.

99.4.4. **Pedestrian Circulation**

99.4.4.1. **SIDEWALKS (concrete)** – all SIDEWALKS shall be constructed in accordance with the following standards and as illustrated in Figures 99.5.4.1.a and 99.5.4.1.b.

99.4.4.1.1. Minimum width five (5) feet for residential; five (5) feet for nonresidential.

99.4.4.1.2. Setback from wedge curb three (3) feet.

99.4.4.1.3. Setback from curb zero (0) feet.

99.4.4.1.4. Slope - ¼ inch per foot toward curb.

99.4.4.1.5. Type of Material – four (4) inches of Class A concrete on three (3) inches of broken stone or gravel base (at DRIVEWAYS, use 6" of Class A concrete with 6" by 6" reinforcing steel at 68 pounds per 100 square feet)

99.4.4.2. **WALKWAYS (Bituminous)** – all WALKWAYS shall be constructed in accordance with the following standards and as illustrated in Figures 99.5.4.1. a and b.

99.4.4.2.1. Minimum width five (5) feet for residential; five (5) feet for nonresidential; setback from wedge curb 3 feet; or approved alternative approved by the ENGINEER.

99.4.4.2.2. Setback from curb zero (0) feet.

99.4.4.2.3. Slope - ¼ inch per foot toward curb.

99.4.4.2.4. Type of Material – three and one-half (3 ½) inches ID-2 Binder Course; one and one-half (1 ½) inches Surface Course.

99.4.4.3. Any alternates of equal or better quality must be approved by the TOWNSHIP MANAGER or his designated representative.

99.4.5. **DRIVEWAYS** – access onto TOWNSHIP STREETS

99.4.5.1. **General Requirements** – all DRIVEWAYS shall be located, designed, constructed, and maintained in such a manner as not to interfere or be inconsistent with the design, maintenance and drainage of the STREET. A traffic study may be required to justify the number and location of DRIVEWAYS requested.

99.4.5.2. **General Location Restrictions** – access DRIVEWAYS shall be permitted at locations in which:

99.4.5.2.1. sight difference is adequate to safely allow each permitted movement to be made into or out of the access DRIVEWAY;

99.4.5.2.2. the free movement of normal highway traffic is not impaired;

99.4.5.2.3. the DRIVEWAY will not create a hazard; and

99.4.5.2.4. the DRIVEWAY will not create an area of undue traffic congestion on the highway

99.4.5.3. **Specific Location Restrictions**

99.4.5.3.1. Access DRIVEWAYS shall not be located at interchanges, ramp areas, or locations that would interfere with the placement and proper functioning of highway signs, signal, detectors, lightening or other devices that affect traffic control.

99.4.5.3.2. The location of a DRIVEWAY near a signalized intersection may include a requirement that the permitted provide, in cooperation with the TOWNSHIP, new or relocated detectors, signal heads, controller, and the like, for the control of traffic movements from the DRIVEWAY.

99.4.5.3.3. Access to a property which abuts 2 or more intersecting STREETS may be restricted to only that STREET which can more safely accommodate its traffic.

99.4.5.3.4. The TOWNSHIP MANAGER or his designated representative may require the permitted to locate an access DRIVEWAY directly across from a highway, local road, or access DRIVEWAY on the opposite side of the roadway of it is judged that offset DRIVEWAYS will not permit left turns to be made safely or that access across the roadway from one access to the other will create a safety hazard.

99.4.5.3.5. The TOWNSHIP MANAGER or his designated representative may require that DRIVEWAYS outletting to cul-de-sacs be located so as to maximize the area available for snow storage.

99.4.5.4. **Number of DRIVEWAYS** – the number and location of DRIVEWAYS which may be granted will be based on anticipated usage and interior and exterior traffic patterns.

99.4.5.4.1. Normally not more that two DRIVEWAYS will be permitted for a property.

99.4.5.4.2. Regardless of frontage, a development may be restricted to a single entrance/exit DRIVEWAY.

99.4.5.5. **Approaches to DRIVEWAYS** – DRIVEWAY approaches shall conform to the following standards:

99.4.5.5.1. The location and angle of an access DRIVEWAY approach in relation to the to the intersection shall be such that a vehicle entering or leaving the DRIVEWAY may do so in an orderly and safe manner and with a minimum of interference to STREET traffic.

99.4.5.5.2. Where the access DRIVEWAY approach and STREET pavement meet, flaring of the approach may be necessary to allow safe, easy turning of vehicular traffic. A minimum radius of 30 feet is required for DRIVEWAYS which permit trucks.

99.4.5.5.3. Where the STREET is curbed, DRIVEWAY approaches shall be installed one and one-half (1 ½) inches above the adjacent highway or gutter grade to maintain proper drainage. No filling of gutters shall be permitted.

99.4.5.6. **DRIVEWAY Classification** – the ability of a DRIVEWAY to safely and efficiently function as an integral component of a STREET system requires that its design and construction be based on the amount and type of traffic that it is expected to serve and the type and character of roadway which it accesses. DRIVEWAYS are separated into 4 classifications, based on the amount of traffic that are expected to serve. A description of each classification and typical examples of land uses normally associated with each follows:

99.4.5.6.1. Minimum use DRIVEWAY, See Figure 99.5.5.6.1. A DRIVEWAY normally used by not more than 25 vehicles per day, such as:

99.4.5.6.1.1. single family dwellings, duplex houses or

99.4.5.6.1.2. apartments with five units or less

99.4.5.6.2. Low volume DRIVEWAY, see Figure 99.5.5.6.2. A DRIVEWAY normally used by more than 25 vehicles per day but not less than 750 vehicles per day, such as:

99.4.5.6.2.1. office buildings

99.4.5.6.2.2. elementary and junior high schools

99.4.5.6.2.3. car washes

99.4.5.6.3. Medium volume DRIVEWAY, see Figure 99.5.5.6.3. A DRIVEWAY normally used by more than 750 vehicles but less than 1500

vehicles per day, which does not normally require traffic signalization, such as:

99.4.5.6.3.1. motels;

99.4.5.6.3.2. fast food restaurants; or

99.4.5.6.3.3. service stations and small centers or plazas

99.4.5.7. **General DRIVEWAY Design** – the design features described in this section and illustrated in the attendant figures are to be used by the applicant in designing the DRIVEWAY plans which accompany the application. Dimensions shall be selected from the ranges of values shown on the appropriate figure, unless site conditions warrant a deviation. The TOWNSHIP may require design details which are more stringent than those specified in this chapter to insure the safe and efficient operation of any proposed DRIVEWAY. Figures 99.5.5.6.1., 99.5.5.6.2., and 99.5.5.6.3. show two sets of design values. The applicant shall design his DRIVEWAY using the values appropriate for the posted speed of the roadway being accessed.

99.4.5.8. **Angle of access DRIVEWAY approach** – angle of access DRIVEWAY approach shall include the following:

99.4.5.8.1. Access DRIVEWAY approaches used for two-way operation shall be positioned at right angles, that is, 90°, to the STREET or as near thereto as site conditions permit, except as authorized by the TOWNSHIP upon recommendation of the Traffic ENGINEER.

99.4.5.8.2. When two access DRIVEWAYS are constructed on the same property frontage and used for one-way operation, each of these DRIVEWAYS may be placed at an angle less that a right angle, but not less than 45° to the STREET, except that along divided STREETS where no openings are allowed in the median the minimum angle of an exit DRIVEWAY may be 30°.

99.4.5.9. **DRIVEWAYS adjacent to** intersections – DRIVEWAYS serving properties located adjacent to a STREET intersection shall be subject to the following:

99.4.5.9.1. There shall be a minimum 30 foot length tangent distance between the intersecting STREET radius and the radius of the first permitted DRIVEWAY.

99.4.5.9.2. The distance from the edge of pavement of the intersecting highway to the radius of the first permitted DRIVEWAY shall be a

minimum of 20 feet on curbed STREETS and 30 feet on uncurbed STREETS.

99.4.5.9.3. Paragraphs 1 and 2 of this subsection may be waived only if the intersecting STREET radius extends along the property frontage to the extent that compliance is physically impossible.

99.4.5.10. **Multiple DRIVEWAYS** – Multiple DRIVEWAYS serving the same property must be separated by a minimum distance of 30 feet measured along the shoulder, ditch line, or curb.

99.4.5.11. **Clear Sight Triangle** – the area between the right-of-way line adjacent to and on both sides of a DRIVEWAY shall be used as a clear sight triangle to provide a physical barrier between the traveled way and activity on a private property. This area shall remain free of any obstructions which may interfere with a clear line of vision for entering or exiting vehicles. See Figure 99.5.1.3.2.7. for the required clear sight triangle.

99.4.5.12. **Sight Distance**

99.4.5.12.1. Sight distance shall be measured from a height of the drivers eye above the road surface is three and one-half (3 ½) feet and to an object three and one-half (3 ½) feet in height. These conditions are for calculating the site distance for DRIVEWAY of low volume STREET. The minimum acceptable sight shall be computed from the following formula:

$d=1.47Vt+V^2/(30((a/32/2)\pm G)$
d = minimum safe stopping sight distance (SSD)
V = Velocity of Vehicle (miles per hour)
t = Brake reaction time (2.5 seconds)
a = deceleration rate (11.2 ft/sec^2)
G = percent of grade divided by 100

99.4.5.12.2. The minimum acceptable sight distance values shall be computed from the following formula:

$SSSD=1.47Vt + \frac{V^2}{30 (f \pm g)}$
SSSD = Minimum safe stopping sight distance (feet)
V = Velocity of vehicle (miles per hour)
t = Perception time of motorist (average = 2.5 seconds)
f = wet friction of pavement (average = 0.30)
g = Percent grade of roadway divided by 100

See Figure 99.5.1.3.2.7. for the location of required sight distance. See Table 99.4.5.12.1. for the computed values of the minimum sight distance at various grades.

Table 99.4.5.12.1

Minimum Acceptable Safe Stopping Sight Distance (feet)

Grade of Approach on Adjacent Street	Posted Speed (mph) on Adjacent Street							
	20	25	30	35	40	45	50	55
-15%	162	231	310	401	503	615	739	874
-14%	157	222	298	384	480	587	405	832
-13%	152	214	287	369	461	562	674	795
-12%	148	208	277	355	443	540	647	762
-11%	144	202	268	344	428	521	622	733
-10%	140	196	260	333	414	503	600	706
-9%	137	191	253	323	401	587	581	682
-8%	134	187	247	314	389	472	563	660
-7%	131	182	241	306	379	459	546	641
-6%	129	179	235	299	369	447	531	622
-5%	127	175	230	292	360	435	517	605
-4%	125	172	226	286	352	425	504	590
-3%	123	169	221	280	345	415	492	576
-2%	121	166	217	274	337	406	481	562
-1%	119	164	214	269	331	398	471	550
0%	118	161	210	265	325	390	462	538
1%	117	159	207	260	319	383	453	527
2%	115	157	204	256	314	376	444	517
3%	114	155	201	252	309	370	436	508
4%	113	153	198	249	304	364	429	499
5%	112	151	196	245	299	358	422	490
6%	111	150	194	242	295	353	415	482
7%	110	148	191	239	291	348	409	475
8%	109	147	189	236	287	343	403	467
9%	108	145	187	233	284	338	397	461
10%	107	144	185	231	280	334	392	454
11%	106	143	183	228	277	330	387	448
12%	105	141	182	226	274	326	382	442
13%	105	140	180	224	271	322	378	437
14%	104	139	178	221	268	319	373	431
15%	103	138	177	219	266	315	369	426

99.4.5.12.3. If sight distance requirements as specified in this chapter cannot be net, the TOWNSHIP may deny access to the STREET, unless restricted turning movements or required mitigating or corrective actions, such as indemnification from liability, are taken.

99.4.5.12.4. If an easement is required to provide adequate sight distance at a DRIVEWAY or the junction of two STREETS, the TOWNSHIP will

specify the location and type of easement required. This easement will require that grading only be permitted as shown on the approved plan and that no vegetation be permitted above two feet from ground contours.

99.4.5.12.5. Applicant must measure all sight distance measurements must be recorded on Figure 99.5.1.3.2.7.

99.4.5.13. **Grade of Access DRIVEWAY** – grade of access DRIVEWAY shall be constructed in the following manner:

99.4.5.13.1. All DRIVEWAYS shall be constructed so as not to impair drainage within the right-of-way, alter the stability of the improved area, or change the drainage of adjacent areas.

99.4.5.13.2. Where a drainage ditch or swale exists, the permittee shall install adequately sized pipe under the DRIVEWAY. Drainage pipe installed under DRIVEWAYS shall be at least fifteen (15) inch I.D., reinforced concrete pipe or ADS-N-12. The permute shall be responsible for maintaining the pipe in a fully functioning, open condition.

99.4.5.13.3. Grade requirements in uncurbed shoulders within the right-of-way shall conform to Figure 99.5.5.6.3a and 99.5.5.6.3b.

99.4.5.13.4. Grade requirements where curb and SIDEWALKS are present.

99.4.5.13.4.1. The DRIVEWAY approaches shall be installed 1 ½" above the adjacent roadway or gutter grade for STREETS with concrete curbs to maintain proper drainage. For wedge curbs the DRIVEWAY approach shall be installed immediately behind the curb. See Figure 99.5.5.6.3c.

99.4.5.13.4.2. The difference between the cross slope of the roadway and the upward grade of the DRIVEWAY approach shall not exceed 8.0%.

99.4.5.13.4.3. When a planted area exists in front of the SIDEWALK, one of the following two (2) cases shall apply:

99.4.5.13.4.3.1. When the grass strip between the curb and the SIDEWALK is wide enough to maintain an 8.0% maximum DRIVEWAY approach grade, construct the DRIVEWAY as shown in Figures 99.5.5.6.3a and 99.5.5.6.3c.

99.4.5.13.4.4. When the SIDEWALK is directly against the back of the curb and the SIDEWALK is at least five feet wide, the curb shall

be sloped as shown in Figures 99.5.5.6.3c and 99.5.5.6.3a of this subsection. This will eliminate the need for depressing the back edge of the SIDEWALK.

99.4.5.14. **Access DRIVEWAY Pavement** – all access DRIVEWAYS shall be paved in accordance with the standard in subsection 99.4.6.1.

99.4.5.15. **Curbing Requirements**

99.4.5.15.1. Installation of curbing may be required wherever it is necessary to control access or drainage, or both. All curbing must be permanent.

99.4.5.15.2. When curb exists adjacent to a proposed DRIVEWAY, the line and grade of the existing curb shall be matched, unless otherwise authorized by the permit.

99.4.5.16. **Auxiliary Lanes, Median Openings, Shoulder Upgrading and Traffic control Devices** – auxiliary lanes, median openings, shoulder upgrading and traffic control devices may be authorized or required upon recommendation of the Traffic ENGINEER. Unless accepted by the TOWNSHIP, such improvements shall be maintained by the permittee.

99.4.6. **Parking Areas and DRIVEWAYS on Lots**

99.4.6.1. **Minimum Paving Standards**

99.4.6.1.1. For **DRIVEWAYS** and **PARKING AREAS** for single family.

99.4.6.1.1.1. **Bituminous Paving:**
6” Crushed Aggregate base
1 ½” ID-2 Binder Course
1” ID-2 Surface Course; or
4 ½” Bituminous concrete Base Course
1” ID-2 Surface Course

99.4.6.1.1.2. **Concrete Paving**: 5” Class “A” concrete with 6” by 6” steel mesh @ 68 lb./100 sq. ft.

99.4.6.1.1.3. **Brick Paving:**

99.4.6.1.1.3.1. Construct base course of dense graded aggregate, compacted to a depth of 4”

99.4.6.1.1.3.2. Construct adequate edge restraints.

99.4.6.1.1.3.3. Place bed of clean sharp sand, 1 ½” in depth

99.4.6.1.1.3.4. Install paving stones with joints of approximately 1/8”

99.4.6.1.1.3.5. When required, paving stones shall be cut with an appropriate cutter in order to provide neat undamaged edges.

99.4.6.1.1.3.6. Tamp pavers with a mechanical vibrator until uniformly level true to grade and free of movement.

99.4.6.1.1.3.7. Fill voids by sweeping in clean, fine sand.

99.4.6.1.2. For all DRIVEWAYS and PARKING AREAS other than single family.

99.4.6.1.2.1. **Bituminous Paving:**
6” Crushed Aggregate Base
1 ½” ID-2 Binder Course
1 ½” ID-2 Surface Course; or
4 ½” Bituminous Concrete Base Course
1 ½” ID-2 Surface Course

99.4.6.1.2.2. **Concrete Paving:**
6” Class “A” concrete with 6” by 6” steel mesh @ 68 lb./100 sq. ft.

99.4.6.2. **Parking Area Standards**

99.4.6.2.1. **Slopes**

99.4.6.2.1.1. Maximum 5% cross slope (along length of vehicle)

99.4.6.2.1.2. Maximum 7% longitudinal slope (perpendicular to vehicle)

99.4.6.2.1.3. Minimum 1% cross slope or longitudinal slope

99.4.6.2.2. **Curbs** – when required, curbs shall be constructed to the following standard:

99.4.6.2.2.1. 8” by 6” concrete deck curb; See Figure 99.5.6.2.2.1.

99.4.6.2.2.2. 8” by 24” standard concrete curb; See Figure 99.5.6.2.2.2.

99.4.6.2.2.3. Wedge curb with wheelstops, See Figure 99.5.6.2.2.3

99.4.6.2.2.4. Curb ramps—the location and design of all curb ramps for access by disabled persons shall be approved by the ENGINEER. Such approval does not represent compliance with the Accessibility Guidelines of the Americans with Disabilities Act **[Added 6-1-92 by Ord. No. 1541]**

99.4.6.2.3. Wheelstops shall be 10" by 7" by 8'-0". Precast reinforced concrete. See Figure 99.5.6.2.3

99.4.6.2.4. Bumper stops shall be Pennsylvania Department of Transportation Type 2-s Guide Rail without rubbing rail. Offset blocks are optional. See Figure 99.5.6.2.4.

99.4.6.3. **DRIVEWAY Standards**

99.4.6.3.1. **Grade** – maximum DRIVEWAY grade outside the right-of-way shall be 12% for low, medium and high volume DRIVEWAYS and 15% for minimum use DRIVEWAYS, and minimum DRIVEWAY grade shall be 1%

99.4.6.3.2. Width of DRIVEWAYS other than parking aisles and other than single family:

99.4.6.3.2.1. Minimum, one lane-one way: fifteen (15) feet;

99.4.6.3.2.2. Minimum, two-lane, one or two way: twenty-two (22) feet;

99.4.6.3.2.3. DRIVEWAY crown requirements: cross slope 2.5%

99.4.6.3.2.4. Governors DRIVEWAY: Minimum of twelve (12) feet and maximum of fifteen (15) feet.

99.4.6.3.2.5. **Curb Standard** – when provided, curbs shall meet the same standard as curbs in PARKING AREAS. See 99.4.6.2.2

99.4.6.3.3 Width at the STREET of DRIVEWAYS for single family residences: **[Added 4-7-08 by Ord. No. 1996]**

99.4.6.3.3.1. Minimum: ten (10) feet

99.4.6.3.3.2. Maximum: twenty (20) feet

99.4.6.3.4. All DRIVEWAYS must be a consistent width through the PUBLIC RIGHT-OF-WAY; width may increase once outside of the RIGHT-OF-WAY. **[Added 4-7-08 by Ord. No. 1996]**

99.4.7. **Fire Hydrants**

99.4.7.1. **Public Water Main Pipe Sizing** – minimum diameter of water mains serving public fire hydrants shall be 8" (203.2 mm). Larger diameter pipe shall be installed as calculated for flow volume and pressure requirements for special requirements as required by the public franchise granted jurisdiction in the **TOWNSHIP** by the Public utility Commission of the Commonwealth of Pennsylvania.

99.4.7.2. **Spacing Between Public Fire Hydrants**

99.4.7.2.1. **Maximum Spacing between Public Fire Hydrants** – shall be 1,200 feet, except that no building other than an accessory building shall be a distance greater than 600 feet from a hydrant. The maximum spacing distance shall be reduced where accessibility for operation of fire equipment and emergency vehicles is impaired by adverse terrain features.

99.4.7.2.2. **Exception** – the distance of 1,200 feet in Section 99.4.7.1. shall be modified to read 500 feet for properties with zoning classifications of C-1, C-2, C-3 RM, RM-P and PRT. With respect to properties with zoning classifications of C-2, C-3, RM, RM-P and PRT, no credit for hydrants shall be allowed where the hydrant location requires laying Fire Department hose across a STREET or highway other than a residential STREET**.**

99.4.7.3. **Spacing Between Private Fire Hydrants** – DEVELOPERS of properties with zoning classifications of R-5, C-3, SB, RM-P and PRT shall provide and maintain private fire hydrant and water supply main systems in which the hydrant spacing will conform to Section 99.4.7.2 provided any building is beyond the specified public hydrant distances in Section 99.4.7.2.1.

99.4.7.4. **Fire Hydrant Specifications**

99.4.7.4.1. Fire hydrants shall comply in all respects with latest AWWA specifications and shall be compression type, with the main valve opening against the pressure and closing with the pressure.

99.4.7.4.2. Fire hydrants shall be drain type, 5 ¼" valve opening with two hose (2 ½" ID, Pittsburgh Standard Thread) and the pumper threads shall be 4-inch Storz type fitting with a locking lever. **[Amended 10-6-25 by Ord. No. 2272]**

99.4.7.4.3. The bottom stem threads of the main valve rod shall be fitted with an acorn nut or suitable means for sealing the threads away from the water.

99.4.7.4.4. Changes in size or shape of waterway shall be accomplished by means of easy curves. Exclusive of the main valve opening, the net area of the waterway of the barrel and the foot piece at the smallest part shall not be less that 120% of that of the new opening of the main valve.

99.4.7.4.5. Hose and steamer caps shall be individually chained to the hydrant.

99.4.7.4.6. The hydrant shall be so designed that when it is in place no excavation will be required to remove the main valve and movable parts of the drain valve. Further, the hydrant shall be of the type that can be extended without excavating.

99.4.7.4.7. Hydrants shall be traffic model type in which barrel and operating mechanism shall be so designed that in the event of an accident, or breaking of the hydrant above or near the grade level, the main valve will remain closed.

99.4.7.4.8. Main valve rod shall be made in 2 parts and fitted with breakable feature at the ground line flange.

99.4.7.4.9. The operating threads of the hydrant shall be so designed as to avoid the working of any iron or steel parts against either iron or steel. The operating stem and nut threads shall be square or acme type.

99.4.7.4.10. The operating threads shall be completely sealed away from the water at all times when valve is either open or closed. The operating rod shall be bronze sheathed when it passes through the stuffing box. Hydrants having operating threads located in the waterway will not be acceptable.

99.4.7.4.11. Bonnet shall be weatherproof free-draining and of a type that will maintain the operating mechanism in readiness to use under freezing conditions.

99.4.7.4.12. Operating nut shall be provided with convenient means to afford lubrication to insure ease of operating and the prevention of wear and corrosion.

99.4.7.4.13. Hydrants shall be furnished with an auxiliary gate valve having flange for bolting to flanged shoe on hydrant and other end to suit type of pipe being used.

99.4.7.4.14. Hydrant shall be the dry barrel type and hydrant shoe shall have positive acting non-corrodible drain valves that shall drain the hydrant completely by opening as soon as the main valve is closed, and also to close tightly when the main valve is open. Drain valve operating by springs or gravity will not be acceptable.

99.4.7.4.15. Packing gland located in bonnet shall be solid bronze and gland bolts shall be steel with bronze nuts. Double O-Ring seals may be used in lieu of conventional stuffing box.

99.4.7.4.16. All like parts of hydrant of the same size and model produced by the same manufacturer shall be interchangeable.

99.4.7.4.17. Hydrants shall open by turning to the left.

99.4.7.4.18. Threads on hose, steamer, operating nut, and cap nuts shall be in Pittsburgh Standard Thread. Threads as specified shall be factory installed. Hydrants shall be given a shop coat of chromate primer and two field coats of enamel. Private hydrants shall be red and public hydrants shall be yellow.

99.4.7.4.19. Hydrants shall be of a model currently listed by Underwriters Laboratories, Inc., or Factory Mutual research corporation at the time the application is submitted.

99.4.8. **Guide Rails** – All Guide Rails shall be designed and specified in accordance with the following Pennsylvania Department of Transportation Publications:

99.4.8.1. **Design Standards**

99.4.8.1.1. Publication 13M, Highway Design, Design Manual Part 2 (DM-2), Latest Edition, Chapter 12 Guide Rail, Median Barrier, and Roadside Safety Devices.

99.4.8.1.2. Publication 70M, Guidelines for the Design of Local Roads and Streets, Latest Edition, Chapter 2, 2.1.G. Guide Rails.

99.4.8.1.3. Publication 72M, Standards for Roadway Construction, Latest Edition, Standard Drawing Number RC-50 through RC-59M.

99.4.8.1.4. Publication 408M, Specifications, Latest Edition, Section 620, and Section 1109

99.4.8.2. **Impact Attenuating Devices** – All Impact Attenuating Devices shall be designed and specified in accordance with the following Pennsylvania Department of Transportation, Publications:

99.4.8.2.1. Publication 13M, Highway Design, Design Manual Part 2 (DM-2), Latest Edition, Chapter 12 Guide Rail, Median Barrier, and Roadside Safety Devices.

99.4.8.2.2. Publication 408M, Specifications, Latest Edition, Section 619, Section 620, Section 696, and Section 697.

99.4.9. **Cable TV** – reserved

99.4.10. **Electric** – reserved

99.4.11. **Gas** – reserved

99.4.12. **Water** – reserved

99.4.13. **Monuments and Markers**

99.4.13.1. **Location** – at least two monuments shall be placed on each STREET in subdivision and at the intersections of lines forming angles in the boundaries of subdivisions additional monuments may be requested by ENGINEER.

The STREET monuments shall be placed in the STREET right-of-way, five feet off the right-of-way line, at the beginning and ends of tangent sections. Additional monuments on line shall be placed for sighting when topographic conditions require.

The locations and tie-in dimensions of all monuments shall be shown on the plan for recording.

99.4.13.2. **Type, Material and Size** – monuments shall consist of a three foot length of six inch vitrified clay or PVC pipe, filled with concrete to with in 3 ½" of the spigot end. A ½" diameter barbed bronze plug, 3 ½" in length shall be centered in a 1:2 cement mortar mix. The mortar shall be finished flush with the spigot end and the bronze plug shall project ¼". The actual survey point shall be indicated by 1/16" hole drilled in the bronze plug. Monuments shall be set at finished grade by a Registered Surveyor after completion of the PUBLIC IMPROVEMENTS and site grading.

99.4.13.3. No PUBLIC IMPROVEMENTS shall be accepted by the TOWNSHIP until all required monuments have been set, and certified to, by a Registered Surveyor.

99.4.14. **Street Name Signs**

99.4.14.1. STREET name signs at the intersection of a STREET classification as a Local Residential STREET with another STREET shall meet the following construction standard:

99.4.14.1.1. **Material** – STREET name signs shall be constructed of .125-gauge aluminum sheet material with scalloped corners and made to fit 2-3/8" OD galvanized steel pipe. Reflective sheet material will be High Intensity Prismatic. **[Amended 11-07-16 by Ord. No. 2157]**

99.4.14.1.2. **Lettering and Color** – letters and borders to be screen printed on reflective paper. MEASUREMENTS: Top unit to be 36" x 10", including the radius containing 1.5" Township script. Bottom unit to be 36" x 7". Lettering to be 4" caps and 3.5" caps, respectively, in the Black Baker Signet font. Borders to be two colors with .10 black and .15 red, respectively. **[Amended 11-07-16 by Ord. No. 2157]**

99.4.14.2. STREET name signs at an intersection where all the STREETS are classified as other than Local residential shall meet the CONSTRUCTION STANDARDS found in the Pennsylvania Department of Transportation Title 67, chapter 211.841 (23.741), STREET Name Sign, D3-1. However, the legend shall be white with a green background and the sign shall be reflectorized, not illuminated internally. Posts shall be green channel lock or equivalent.

99.4.15. **Street Lighting**

99.4.15.1. STREET lights at the intersection of STREETS classified as Local Residential shall meet the following construction standard:

99.4.15.1.1. **Luminaire** – G.E. Evolve LED Roadway Luminaire (Model ERS1 or ERS2) or equivalent. Luminaires shall be installed to direct light away from residential uses or lots in residential zoning districts. **[Amended 9-5-17 by Ord. No. 2174]**

99.4.15.1.2. **Pole and Anchor Base** – Shakespeare low mount, post top fiberglass anchor base light pole 14 feet series AS, standard construction.(Ordering # AS14-02 N1AA 01) and anchor base shroud (Ordering # OPSH-1017-1)

99.4.15.2. **STREET** lights at other intersection shall meet the following standard:

99.4.15.2.1. **Luminaire** – G.E. Evolve LED Roadway Luminaire (Model ERS1 or ERS2) or equivalent. **[Amended 9-5-17 by Ord. No. 2174]**

99.4.15.2.2. Pole and anchor base shall be constructed per UTILITY company specifications using a metal pole where there is option.

99.4.15.2.2. Pole and anchor base shall be constructed per UTILITY company specifications using a metal pole where there is option.

99.4.16. **Site Lighting**

99.4.16.1. Site lighting shall be designed as such that the source of illumination is concealed within the housing of the light fixture. **[Amended 9-5-17 by Ord. No. 2174]**

99.4.16.2. All light fixtures shall be equipped with lenses that are flat and installed parallel to the ground. **[Added 9-5-17 by Ord. No. 2174]**

99.4.16.3. All light fixtures are limited to a maximum correlated color temperature of 4,000 Kelvin. **[Added 9-5-17 by Ord. No. 2174]**

99.4.16.4. All fixtures shall provide a full cutoff at the property line as classified by the Illuminating Engineering Society of North America. **[Added 9-5-17 by Ord. No. 2174]**